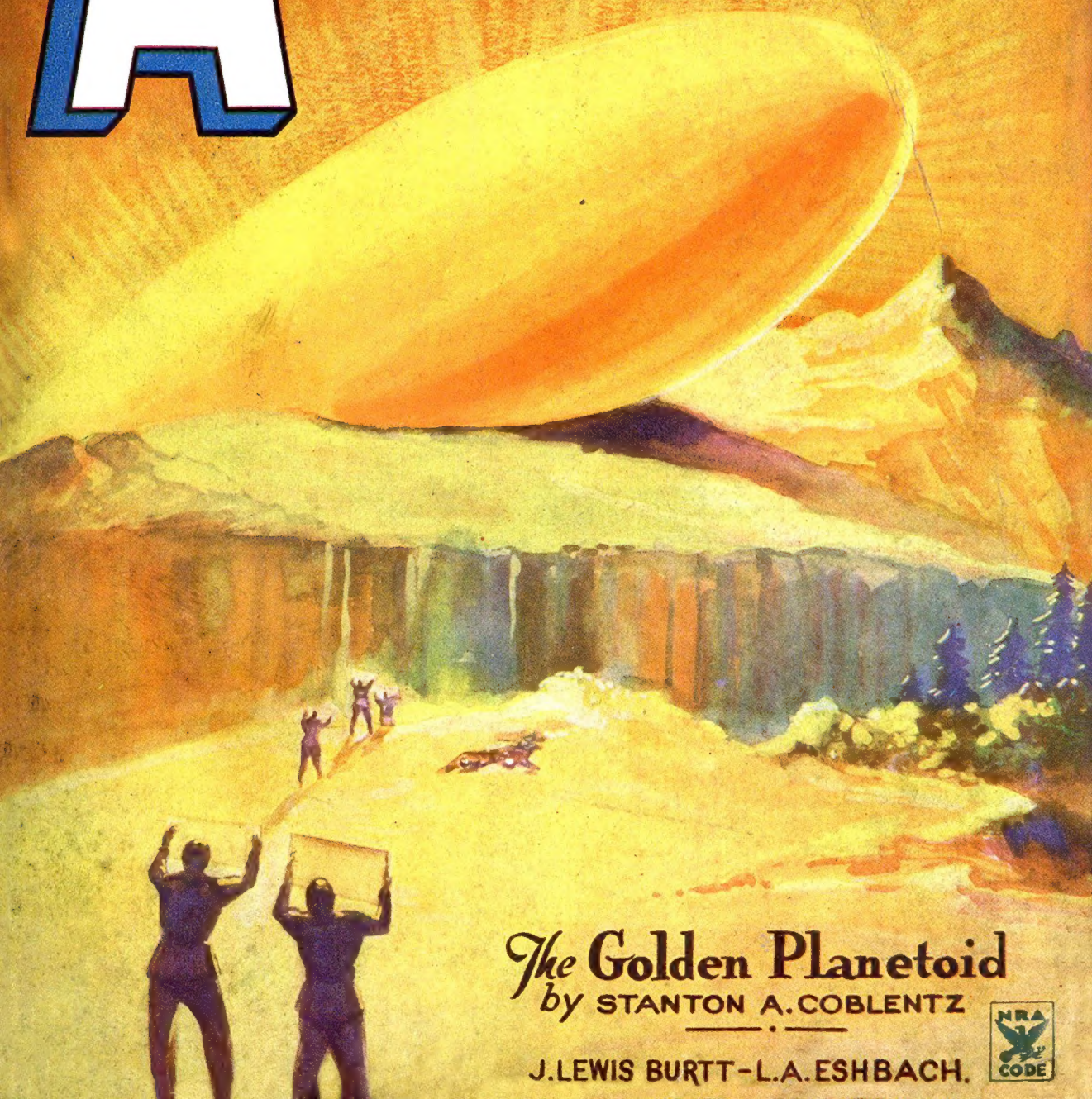


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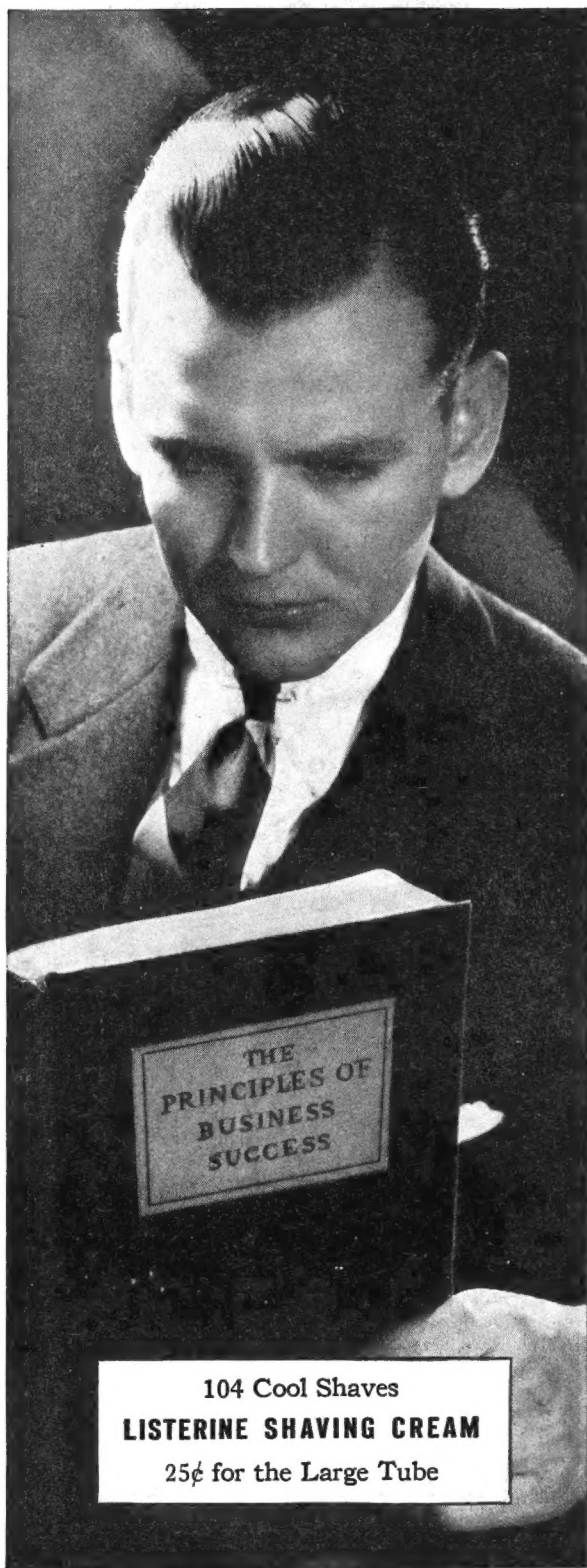
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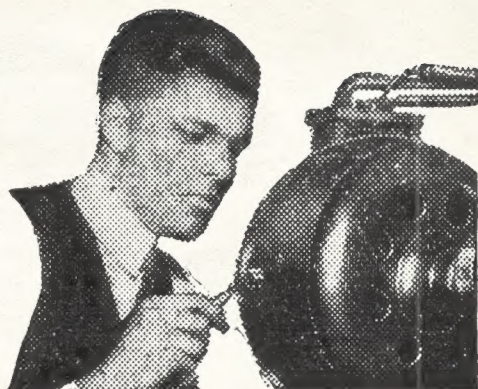
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Science Fiction

Vol. 10

AUGUST, 1935

No. 5

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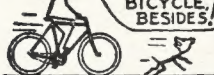
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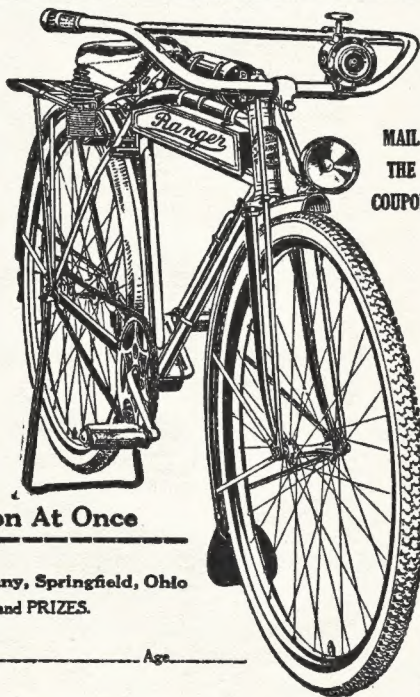
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Numbers, Lines, Areas and Volumes

By T. O'CONOR SLOANE, Ph.D.

IT was told of an eminent pugilist, one who conquered the invincible hero of the fighting world of his day, that he had a positive hatred of books. If one takes them rightly, with due regard to the authors and quality of their products, they will not be hated. The same thing, virtually, may be said about numbers. If they are properly studied, and not very hard at that, and if the traditions and histories of numbers are taken into the range of our contemplation, we will find that there is much of interest in these two topics, traditions and histories, and it will be realized that in actual calculations and the relations of the digits there is no lack of the attractive.

The history and traditions of numbers go back nearly four thousand five hundred years, yet it was only at a comparatively recent period that the formula for obtaining the approximate ratio of the circumference of a circle to its diameter was determined. It took mankind many centuries to find that formula. It runs into

an endless decimal as long as you wish.

The arithmetic of the present time may be taken as evolved and worked out by the shoe-wearing population of the world. All calculations are now performed by the decimal system, based on ten primary numbers. It is almost a certainty that the reason for this system is that man's hands have ten fingers, and that these ten gave the basis of the decimal system now universally employed. But had the originators of the present-day numerals been a shoeless population, there is a definite theory that we might have had a system of numbers based on twenty—ten fingers and ten toes—a total of twenty digits—and with this as a basis, calculations *ad libitum* could be made, with the numbers ranging from one to our nineteen. The base of the twenty digit system would have been inspired by the ten toes added to the ten fingers. A defect of the present system is that the base number ten has only two divisors, two and five. The basic number twenty would

have had four divisors 2, 4, 5 and 10.

There is no question that a twenty digit system would be somewhat clumsy to handle and little attention has been paid to its possibilities. But it is quite amusing to think that our wearing of shoes would have had an influence on our system of numbers—that the work of enumeration and calculation should have any reference to an article of apparel. One writer puts the “case of twenty” definitely, saying that the system seemed to have had quite a standing in tropical (or “barefoot”) regions. The fact that the Greenlanders, although they wear boots, use the “twenty” system, is taken as an evidence of their tropical origin. This seems a little far fetched. Then we have the word “score,” meaning twenty, a suggestion of a “bare-foot” origin.

The name “digits” for the basic numbers comes from the Latin word meaning fingers, so the name “the ten digits” is etymologically or metaphorically correct. If the duodecimal system was adopted the number one hundred would have as substitute one hundred and forty-four, and the government’s famous five billions, for it is nearly that, would “shrink” to less than three and a half billions, but there would be just as large an amount in it as before. If we had twelve fingers this system might have come into use.

The practice of arithmetic brings us up against some curious things. We know definitely that there is no complete value for π (pi), the symbol of the relation of the diameter to the circumference of the circle.

The efforts of ancient philosophers to find the value of this ratio, expressed by π , the much used and very familiar Greek letter, are quite curious. An Egyptian writer, Ahmes or Aamesu, who wrote before 1700 B.C., using as his basis a treatise 800 years older to be dated

at about 2500 B.C., gave the ratio 3.1605. This is nearly two three-hundredths wrong. Archimedes, about fifteen hundred years later, did a little better, putting it between $3\frac{1}{7}$ and $3\frac{10}{71}$, the average of these two values is about 3.1418, which is pretty close, about two-thirty thousandths wrong. The Chinese used the fraction $\frac{22}{7}$, or 3.1429, which is not so good.

There is one quantity in this world of ours which can be directly measured by graduated rule or its equivalent. It is the primary expression of size and all other measurable things may be termed multiples of it. It is the line, the basic and the simplest element of size. If we depart from the simple or primary dimension, which is length, and multiply one line by itself, we obtain the basic element, area. It may be the square foot or square meter or any one of other innumerable units of surface. Then if we multiply the basic area by the same basic line, we have the cube, the basic unit of volume.

The above may impress the reader as rather abstract, but it simply states that the line multiplied by the line gives an area, and an area multiplied by a line gives a solid. In the practical, everyday sense, the line is the only dimension that can be directly measured. The dimensions of other things come back to the line as the base.

If we could stop here, not only our arithmetic but our higher mathematics would be delightfully simple. But there are curves, lines bending according to mathematical rules, and curves are the basis of the vast field of arithmetic, algebra and calculus.

It is fair to say that our troubles begin with the circle. This may be called the elementary curve.

The only dimension of a circle which can be directly measured is the diameter. This is a line passing through its center

and extending to the circumference at both ends. We can specify a circle by its diameter, but not by its circumference in an ordinary practical sense. In a specification of constructing a circular edifice, its diameter would invariably be stated, not its circumference. The size of a billiard ball is given as its diameter, never as its circumference, and the same applies to projectiles and guns and to practically all circular objects. This brings us to the most famous problem of mensuration, the relation of the diameter to the circumference of the circle.

Over and over again the number three has been used to multiply the diameter to give the circumference of a circle. This is so inaccurate that it cannot be termed even an approximation. Some kind of an approximation could be obtained by multiplying the diameter by three and one-seventh ($3\frac{1}{7}$). There is no end to the approximations obtainable, but there is absolutely no exact ratio. There is an error, but the use of it involves so minute a departure from the truth in all human calculations that it would only come into consideration in the most abstruse cases. By carrying out the decimal it can be made as small as you desire. If applied to the determination of the length of the earth's annual journey around the sun, neglecting the ellipticity of the orbit, it would give a result far within a few feet of error, even if carried out to a comparatively small number of decimals, certainly very little for a journey of nearly six hundred millions of miles. The error due to the ellipticity of the orbit would be more than this.

The French have evolved a sentence in which the number of letters in each word gives the value of π to ten decimals. *Que j'aime à faire connaître un*

3 1 4 1 5 9 2
nombre utile aux sages.
6 5 3 5

The number of letters in each word give the value of the digits of π . The following is an English couplet, which answers the same purpose. See *I have*

3 1 4
a rhyme assisting my feeble brain its
1 5 9 2 6 5 3
tasks resisting.

5 9
In each case the decimal point follows 3.

The English language couplet extends to one more decimal place than does the French sentence. As this place is filled by the digit 9, it follows that the French couplet should end in a six-letter word; we leave the selection of a French word of six letters to our readers. *Hommes* might answer.

One misguided individual, William Shaw by name, carried out the decimal to seven hundred and seven places, more numbers than there are words on this page. He could have been better employed. His name might be spelled Pshaw (see Webster's Dictionary).

Two eminent French mathematicians, Laplace and Buffon, calculated that the probabilities of a stick dropped upon a surface marked with parallel lines falling across one of the lines would give an approximate value of π . The stick must be shorter than the distance from line to line. In three experiments the stick was thrown 600 times, 1,120 times and 3,204 times. The values of π deduced from the fallings of the stick were respectively 3.137, 3.1419 and 3.1553, certainly values curious in their approximations to the truth.

One of the puzzles of antiquity was to determine the size of a sphere of the volume of a given cube. Here, as before, we are dependent on the value of π for the solution, which then is simple enough. The volume of a sphere is $\frac{4}{3} \pi r^3$. This we may take as equal to a cube of one foot on a

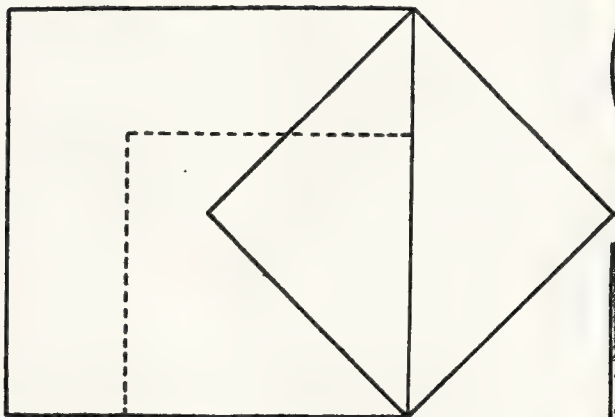
side. The radius of the sphere then would be approximately 0.62.

Another problem which seems very simple yet which exercised the mathematicians of old times, was to calculate the side of a square of twice the area of a known one. Thus suppose a square had an area of one unit of surface what would the side of a square be which was of twice the size? This is really one form of the Pythagorean problem of the square of the hypotheneuse, and the factor by which the side of the known square must be multiplied is the square root of 2, a little in excess of 1.414.

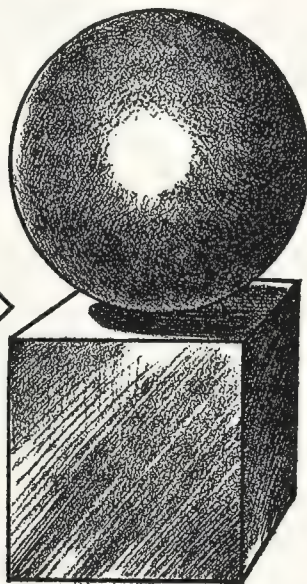
We can go a step further than this when we read of the Delian problem. The oracle at Delos, one of the famous oracles of the days of early Greece, several centuries before the Christian era, announced that a plague would cease, if they would build an altar of Apollo, twice the cubic contents of the existing one, and, like that one, it must be a perfect cube. We have seen that the only standard of measure is a line. So on calculation it will be found that if the new altar

had each side 1.26 that of the original one, it would have twice the volume within a few thousandths. The great philosopher, Plato, 427-347 B. C., figures among the mathematicians who were interested in it.

Distances in the solar system are measured and expressed in miles. The planet Neptune, for many years taken to be the outermost planet of our system is nearly three billions of miles (2,971,000,000) distant from the sun. This is about three hundred times our distance from the same central luminary. Neptune takes about two long human lives to go around the sun once to complete its year, and to generate the centrifugal force required to prevent it from falling into the sun and upsetting all our earth's little share of cosmic equilibrium. The recently discovered planet, Pluto, is still further away and many believe that there are other planets still more remote. The long familiar planet, Neptune, gives us an example of the use of miles as a unit of measurement.



Two squares, one twice the area of the other.



A mathematician's monument; the sphere and cube of equal volume.

The Kingdom of Thought

In this story we find very picturesquely presented strange adventures suggestive of hypnotism. Our readers are familiar with the author of this story, some of whose work in our pages has met with high appreciation, and we are sure that this one will be very well received from its treatment of a possible development in future ages.

By L. A. ESHBACH

CHAPTER I

Adrift in a World of Ice

DONALD STEELE drew his hand across his eyes dazedly. Where was he? Before him stretched an endless expanse of broken, dazzling ice. Innumerable pinnacles, large and small, infinitely confused, formed fantastic ice cities that towered all about him. And across the floor of crystal swept a screaming gale that cut into his flesh like splinters of glass.

As for splinters of glass—there seemed to be fragments of the stuff all around him for a distance of ten feet or more. He looked more closely. It *was* glass—countless, shattered pieces of it, glittering more brilliantly than the ice. But whence it had come he could not determine.

He crouched down behind a frozen hillock, and hid his face in his arms in an attempt to escape the cold. The wind whipped his black hair about his head like a wild thing. A dull pain gripped him; he felt as though a terrific, crushing pressure had been applied to every square inch of his body. suddenly he felt something moist on his hand—blood, trickling from a long gash in his cheek! He shook his head stupidly as he checked the crimson flow with a handkerchief.

He tried to think, his forehead drawn

into deep furrows, but no thought came. His mind seemed blank; only a dazed wonder was there—though something seemed to be haunting the recesses of his memory.

Slowly a vague recollection pierced his mental fog; his reason clutched at it, as something rational, lucid, staple. That shattering roar in the background somewhere; his brain shot through with prismatic spangles of light; these blending, fading; an agony of deadening pain; then the blackness of utter extinction. But before that—what? Though he racked his brain for an answer, there was none.

Suddenly he became aware that the cold was striking more formidably. Clad as he was in a thin summer suit, without a hat, the wind tore through to his skin like lashes that froze as they touched. His thighs had grown stiff; his back and shoulders had lost all heat; and he began to feel the drowsiness that he somehow knew heralded the approach of his last sleep. Quickly he arose to stamp his feet and strike his hands together to keep his blood circulating.

As he kept his body in motion, he cast his eyes on every side, attempting, by a study of his surroundings, to start his memory working. The first thing that caught his attention was the sun—and the heavens around it. Like a great red ball it hung in a sky that was



With a sudden roar of rage the brute increased his pace toward the waiting men, swaying from side to side like an intoxicated sailor.

tinged with a rosy glow—a sun unlike any he had ever seen. It seemed to radiate less heat, to be smouldering, rather than blazing like the sun to which Donald dimly knew he was accustomed. He could look at the orb without discomfort. Apparently it was cooling down—with age!

He shifted his gaze. Far to the north—or what he thought must be the north, using the red sun as a guide—towered a lofty, ice-clad mountain. To east and west and south stretched the wilderness of ice-hummocks, fantastic mounds of jagged crystal, that continued endlessly until they vanished in a foggy, blue-white haze.

But it was all new, foreign to Don Steele. He knew he had never seen this landscape before; knew that he was accustomed to a different, less forbidding environment—but beyond that his mind was blank. A sense of complete hopelessness swept over him. If only he could remember!

Turning toward the north again, he cut short his steady stamping and clapping, and stared across the ice with quickened interest. His heart leaped with mingled hope and dread, for he thought he had detected a sign of movement behind a hill of ice. A rescuer or a new menace—which?

WITH disconcerting abruptness the newcomer sprang into view—a grotesque little man no more than five feet in height. His great hairless head, fully fifteen inches in diameter, seemed completely out of proportion with the rest of his body; it towered over his frail figure like an exaggerated caricature of a human cranium. His face was a dainty thing, small of feature, also hairless, with wide penetrating black eyes. And his only apparel was a single tight-fitting garment of silvery, metallic cloth like a very fine mesh chain-mail,

covering him from head to feet. The latter were shod in sandals of the same substance, with sheets of flexible metal for soles; his huge head was covered by a metallic skull cap. He seemed entirely unaware of the cold.

At sight of Don Steele the little man stopped short, an expression of amazement on his face. An instant he hesitated, then cast a furtive glance over his shoulder—and continued rapidly across the ice.

Don watched his approach with wonder in his eyes. He was blue with cold, but he tried to ignore his discomfort. Suddenly he gasped—the man seemed to be completely surrounded by an almost invisible aura, a faint cloud of light! No sooner had that thought flashed through his mind, than another followed—a thought just as startling. It was as though a voice had whispered close to his ear.

“How’d you get here? . . . You’ll freeze, dressed that way . . . Escaped from the Time Sphere, eh? . . . No; you just came through. . . The Keeper released Kwa, the brute-man—he is after me. . . Run, or we will both die.”

The thoughts came from some extraneous source in short, excited, disconnected sentences—yet he actually heard nothing. Groping for understanding as in a maze, he suddenly realized that he was receiving a telepathic message from the little man.

About to reply, another thought came to him: “Too late; he’s on us! . . . And I have no weapon. . . Curse the Keeper!”

Don followed the other’s gaze, and his own became a fixed stare of incredulity. The approaching figure, the pursuer, was as unlike his quarry as it was possible for a human being to be.

He was tall, a giant, towering almost seven feet above the ice. And he was so broad that Steele, himself a power-

ful man, seemed puny by comparison. His body was clad in heavy gray furs—what appeared to be the shaggy hides of timber wolves. And on one shoulder rested an amazingly huge stone axe, the head of which was fully a foot in length. A formidable weapon, Don thought.

But the giant's face—it was the most repulsive countenance he had ever seen. The features of the brute, low-browed, were wicked little eyes, and heavy lips drawn back over yellow fangs in a perpetual, hideous snarl. Nose there was none. Some time in the past, evidently, a beast had torn it away, for a deep, livid scar, teeth-marks projected from both sides of the ugly mass of twisted flesh where the nose had been.

With a sudden roar of rage the brute increased his pace toward the waiting men, swaying from side to side like an intoxicated sailor. Taking his great axe from his shoulder, he began swinging it back and forth in a menacing fashion, guttural growls issuing from his throat.

The thought of the little man came to Don. "We could run farther, but he would overtake us anyway . . . We only die once."

DON STEELE gritted his teeth, his square jaw thrust forward pugnaciously, an angry glint in his gray eyes. "I'm not planning to die—at least not without a struggle!" he ground out. "Maybe I'll freeze to death later on—but maybe I won't!" Here at least was something he could understand. A fight—it could not be affected in the least by his impotent memory.

Coolly his eyes cast about for a weapon. In an instant they paused; then he sprang toward a long splinter of glass that glittered in the sunlight. It was about two feet in length, more than an inch wide at one end tapering

gradually to a needle-sharp point. But it was pitifully thin, less than a half inch, a sorry weapon to pit against that great axe. Still, it was better than nothing.

As Don raised this, wrapping his handkerchief around the broad end, he realized that the giant was upon him. Instinctively he fell back—and the heavy mass of stone flashed past, no more than an inch from his face. While he strove to regain his balance the giant leaped forward a second time. Landing, with axe poised for a downward blow, a howl of pain and rage burst from him, and he hopped about on one fur-wrapped foot. Raising the other, his prey taking second place in his brute mind, he dropped his weapon and drew a sharp sliver of glass from the thin, hide sole.

Quick to see his chance, Don sprang upon the giant and plunged his improvised dagger into the broad chest. At the same instant he was caught in a mighty embrace, and two powerful arms sought to crush the life from his body.

Madly he struggled, but his efforts were futile. He could not breathe; his ribs were giving way beneath the terrible pressure; his senses were leaving him—when abruptly he was released! As he staggered back, the brute-man swayed for an instant—then crashed to the ice and lay still. And Don saw a length of bloody, sharp-pointed glass protruding from his back—the dagger that had been forced deeper and deeper by the pressure the giant himself had exerted, until it had killed him.

Drawing the back of his hand across his eyes. Don strove to dissipate the blackness that obscured his vision. His ears were ringing and his breath came in great, labored gasps. But he no longer felt so terribly cold; the exertion had quickened circulation. He

knew, however, that in a very few minutes the gale would reassert itself, and the cold would bite still deeper.

"Your're cold—put on the suit of Kwa. It will warm you until we get back to the Time Sphere where you can discard it." The thoughts of the little man reached him. "A fine combat; the Keeper will welcome you."

Don nodded. He realized the wisdom of the suggestion. Those heavy furs would keep him warm. Though what was meant by the Keeper he didn't know. With a quizzical smile at his strange companion he set about removing the foul-smelling, untanned skins from the huge body. In about five minutes the distasteful task was finished and he was dressed in the primitive costume, put on over his clothing.

He turned to his waiting companion, frowning thoughtfully. His mind was again groping for an understanding of his strange surroundings. Other questions plagued his thoughts—wonder at the little man's apparent warmth, the thin veil of light that surrounded him; his queer means of communication; the peculiarity of a brute and an obvious super-intellectual existing in the same age.

"**S**AY," he began, "I want to ask—" The other checked him with a gesture, and his thoughts began pouring into Don's mind. They were less excited now, less disconnected. "I see that you have much to ask, but the effort is not necessary. . . . As we move toward the City of Thought I will tell you all you wish to know. Come."

Don Steele followed wonderingly. This strange little man with the huge head apparently knew his thoughts before he uttered them. They were moving northward toward the ice-clad mountain, threading their way among the frozen hummocks.

"I am Gorg Merlo," the thoughts began. "I have a number, but you would not remember it. . . . You are Donald Steele. . . . You wonder about my defiance of the cold—and the fact that you do wonder marks you as being extremely archaic. Heat was mastered as far back as the year 5000. This radio-active metal, my costume, sets up a vibration about me that retains enough of my bodily heat to maintain a uniform temperature at all times. If you will walk close enough to enter the zone, you will feel it."

Obediently Don drew near the man who called himself Gorg Merlo, and he felt a gratifying warmth surrounding him.

"You saved my life from that brute, Kwa; in return I shall make you a costume like mine. . . . As for my means of communication which seems to puzzle you—I am exercising the normal power of a well-developed mind. I can grasp your thought-vibrations, and can send my own into your brain. I can speak orally—but there is no need for it. Your generation has not yet begun the mastery of thought—and mine actually has not progressed very far. Here in this period you shall meet intelligence rising to its perfection, a veritable Kingdom of Thought."

They were crossing a particularly rough expanse of ice. Gorg Merlo's communication ceased, and he narrowed his eyes as though concentrating on a problem. Don Steele's thoughts were equally busy. Something seemed to be spurring his mind on to greater and greater activity. The little man had spoken of different generations—as—as though they belonged in different ages! Could it be that he was in some alien world—or some alien *time*? He could not accept so incredible an idea. He had read of such things in fiction—but they were mere baseless fantasies.

"The question uppermost in your mind," Gorg Merlo interrupted his soliloquy, "I cannot answer. You are wondering how you came to be here, and in what age you belong. From the contour of your head and your apparel, I would say you belonged somewhere between the nineteenth and twenty-third centuries of the old time-recording system. And since you know nothing of the means of your coming, you must have been flung into the Time Channel without your knowledge."

Don sensed Gorg Merlo's next communication but faintly; something seemed to be prodding his memory—striving mightily to make him recall his past.

"You have entered an era of Thought—an age thousands of years, yes, even thousands of centuries removed from your own time. It is at such a remote point in the Channel that even I have no real conception of its age."

SUDDENLY an excited cry burst from Don's lips. Every faculty had been concentrated on his problem—and abruptly something had seemed to snap within his brain.

"I have it!" he exclaimed. "I have it! It's all come back—all except how I got here. That wet street—the car skidding as I turned a corner—a crash—and blackness! But that doesn't explain—this." His face fell, as, with a wave of his hand, he indicated the forbidding world of ice.

Gorg Merlo resumed his communication. "I thought perhaps I could help you remember with the power of my mind—and the rest is easy. A little explanation of the mysteries of time, and you'll understand exactly what happened.

"Time is a channel or a stream, endless and illimitable, wherein flows all creation in its infinite varieties and forms. Events, phenomena, past, present, and future, all exist simultaneously,

but in different parts of the channel. There are currents in the Stream of Time—some, like the middle of an actual watercourse, rushing rapidly; others, the portions eddying and swirling along the banks, flowing more slowly—and the speed of all phenomena, the rapidity of "time," is governed by the flow of those currents.

"I and my fellow scientists have become quite adept in fording the channel, moving from one current to another, thus traveling into either past or future. We would enter a slower channel, and be in our past. Or, upon entering a faster time course than our own, we would speed ahead into the future—ages as yet not reached by our present.

"I did that—reached this age—and was not permitted to leave.

"As for you—something, some catastrophe, must have launched you into a swifter current of the time steam and brought you here. . . And I am afraid you also will have to remain—even if you could get back!"

Dan looked at Gorg Merlo in consternation. He had read of time travel in fantastic fiction—but to have such a thing happen to him—it seemed incredible. Still—he had seen a prehistoric man, and a man far more highly developed mentally than himself, who could read his thoughts—excellent proof that the incredible had actually happened. He shrugged his shoulders. It was *some* experience, anyway.

Suddenly he clamped his jaws together and scowled. "Who'd try to keep me here, if I'd find a way to—get back?"

The little man grimaced and opened his mouth for the first time. "Ye'll see 'em soon 'nough," he said in a thin, quavering, uncertain voice, his words slurred, with whole syllables left out. "V'ry soon, prob'ly; Th' Great Brains!

. . . We're 'proach'n' th' Kingd'm 'f Tho't. 'T lies 't th' foot 'f th't moun'n."

The towering white mountain loomed up before them, its peak tinged with the red of the dying sun. Don decided that they had gone fully half the distance to the peak. Abruptly he stopped short.

"Why are we going to this place if we're going to be made prisoners?" he demanded. "Isn't there another—"

"For two reasons," Gorg Merlo interrupted voicelessly. "In the first place, there are only two spots on earth in this period where life is possible, and the other is worse than this one. Secondly—look behind you!"

DON whirled—and his jaw fell. For behind them in an orderly row strode fifteen men, all dressed alike in heavy, glittering armor! They looked neither to right nor left, but stood motionless when Don paused. And high above them drifted what appeared to be a great human brain, all of five feet in diameter—a monstrous mass of grey matter surrounded by a dull gray membrane that did not conceal its countless convolutions. Beneath it dangled a tiny face and an equally tiny body, like that of a newborn infant, and as helpless as the weakest of babes. The entire being floated within an almost invisible, transparent gray sphere.

Speechlessly Don Steele turned to Gorg Merlo, his eyes expressing his bewilderment. The other smiled mirthlessly.

"That is what you must expect here," he informed Don. "That gray brain is the Keeper. But they aren't real—the men—only phantoms the Keeper created. That is, they possess substance, but no life. Even the floating brain and dangling body are only images of their creator—I think—though I cannot be sure.

Not real—yet they have the power to kill—by suggestion."

Don blinked; then slowly his features set in an expression of dogged determination. He turned, looked up at the Great Brain—and laughed—grimly!

"I'm in this," he said angrily, "and I'm seeing it through! Come what may, I'll be damned if you'll get my nerve!"

Then he whirled and with long, athletic strides that soon had Gorg Merlo gasping for breath, he stalked on toward the Kingdom of Thought.

CHAPTER II

Exiles of Time

GAD, what a city!" Don Steele breathed the words in awe. He was standing beside Gorg Merlo on the brink of an enormous white precipice, gazing down into a vast valley, their destination. The biting wind whistled shrilly as it swept past them; behind them and on either side stretched a bleak wilderness of ice—yet below them lay a valley apparently of tropical warmth, containing a city whose beauty and magnitude staggered the imagination.

They were looking through an intangible suggestion of a blue haze; Don noticed that it encircled the valley like a wall of light, as far as eye could reach; that it vanished overhead in the depths of the pink-tinted sky. And beyond the haze—that which Gorg Merlo had called the Kingdom of Thought!

"Beautiful!" The word came unbidden from the wonder that stunned Don's thoughts. His mind was lost in a maze of chaotic impressions. A world of opalescent light, blending into an endless plain studded with Gargantuan jewels of dazzling radiance! A vast sea of gemlike splendor, alive with all the varying shades of the spectrum, whose billows of shimmering light swept on

and on to vanish in the blue mist that obscured the foot of the distant mountain of ice!

Slowly, as the edge of his wonder dulled, order came out of confusion. The shifting maze of jewels resolved itself into a city of gleaming, rounded domes, like an ocean of bubbles, all save one uniform in size, all varying in their delicately tinted coloring. That one, in the center of the vast city, was larger, even more resplendent, if that were possible. All seemed to gleam with a light of their own; it waxed and waned endlessly, like—like the pulsating of giant intellects! For some unaccountable reason the strange simile suggested itself to Don's groping mind.

In orderly groups the domes lay, separated by wide thoroughfares, bands of palest blue that threaded the incredible city in every direction. In the wide spaces at the intersections were fountains—but fountains of weaving, vibrating light rather than water! They reminded Don of color organs, sending forth their brilliant symphonies in leaping, living streams, rather than projecting them upon flat, unresponsive screens.

Through the streets moved throngs of people, some hurrying, some wondering about idly; they were so far below the cliff-top that they looked like tiny, scurrying insects. Strangely, they seemed to clash with their surroundings.

THERE was one great discord in this fairyland of color, one break in the harmony. It was a spherical structure far larger than its domelike fellows, colored a drab, dull, dead gray! It stood apart from the other brilliant buildings, close to the wall, a thing of grim ugliness, something that did not belong.

"The Time Sphere," the thought came from Gorg Merlo. He had

mentioned it before, Don recalled idly.

Suddenly the strangest feature of the entire scene struck his senses. Despite all that motion and life and color—there was no sound! The city was silent; he could hear nothing but the howl of the arctic wind rushing past his ears. He looked questioningly at his little companion.

Gorg Merlo nodded his great head toward the hazy wall of blue. "Touch it!"

Obediently Don stretched forth his hand, thrust it against a surface of polished, metallic hardness; it vibrated with a curious, electrical warmth!

"A wall of energy," Gorg Merlo answered his unspoken question, "created by the Great Brains to protect their city from the cold—and from the Black Ones! But even if the wall were not there, you would hear nothing—for in this place there is no sound save that created by the Time Exiles, and them you could not hear . . . But, come let us go down into the city."

He began moving along the edge of the ice; about to follow, Don remembered the armored men and the brain-thing that had been following them. He glanced over his shoulder, then turned completely around astonished. They were not there!

The thought of Gorg Merlo seemed amazed. "I told you they were not real; they were no longer needed—so they vanished. Should they be required again, they—or others—will appear instantly."

Don shook his head dubiously. This little man with a big head talked in riddles most of the time. A wall of energy, the Black Ones, the Time Exiles; men who came and vanished at will! . . . Abruptly he clamped his jaws together and frowned. He couldn't understand a tenth of what was taking

place—but he wouldn't let it shake his nerve!

"Lead on, MacDuff," he snapped. "I'm game!"

They followed the edge of the declivity for several hundred feet, then Gorg Merlo paused to inspect the wall with minute care—and stepped *into* it. He was surrounded by the blue mists, seeming to stand on the transparent substance of the wall, supported by it. "They permit us to enter," he explained. Another riddle, Don thought, as he followed without hesitation.

Suddenly something gave way beneath them, and they began sliding swiftly down an enormous, invisible incline. It reminded Don of a great slide at some seashore resort, magnified a thousand times. But there was no wind, no rush of acceleration, no sound. Down, down they sped, swiftly—then abruptly their speed was checked and without a jar they came to rest on the valley floor.

Don stepped out of the azure wall behind Gorg Merlo into a realm of tropical warmth. He had not realized, until then, how cold he had been, despite the fur suit of the brute-man, Kwa. His face, ears, and hands were numb. But in this temperature he'd soon be comfortable.

"**T**O the Time Sphere," the little F man directed, and he moved toward the distant gray globe with Don following. Viewed from this comparative proximity, Don became aware of its enormity. It was a colossal structure fully five hundred feet in height. The surrounding brilliantly colored and highly polished domes, literally hemispheres, at their highest point, reached no more than twenty feet above the glass-smooth surface of the pale blue street. Don surveyed his surroundings cursorily—then forgot them in his in-

terest in the people who thronged the streets.

Never had he seen so heterogeneous an aggregations of human beings. It seemed as though the Stream of Time had overflowed its banks, and had washed ashore beings from every age since the birth of humanity. Low browed, broad jowled brutes like Kwa brushed against intellectuals with huge heads and dwarfed bodies similar to Gorg Merlo; great yellow haired Vikings in their colorful trappings mingled with men of Don's era. Yellow men, black men, brown men, there were, some in the depths of savagery, almost naked, others clad in strange, unfamiliar costumes, fierce warriors of forgotten ages. Men with heads slightly larger than Don's; men from every age between that of Don and Gorg Merlo and some even beyond the latter!

But all, *all* were men! No women, no children—only men in their prime! And all were silent; they spoke no word.

Wonderingly Don turned to Gorg Merlo. "What ails them? Why are they here?" He shook his head in bewilderment. "Looks like a living record of the evolution of Man."

Gorg Merlo answered audibly in this thin, uncertain voice, his words poorly pronounced, as before. "There's still more t' be seen. I'll 'splain 't all af'er we get t' th' Time Sphere. These'r on'y phan'oms—cr'at'd by th' Gray Brain." He supplemented his statements telepathically. "They are like the armored men who followed us over the ice, created by the Keeper, and directed by his thoughts."

Through the moving, silent throng they made their way. The phantoms aroused within Don a sense of vast wonder. Purposely he touched some of them; they seemed solid enough—but then the wall of pale blue light had

seemed solid too, and they had passed through it!

Another question occurred to Don. "Where are these Great Brains?"

"They're in the domes, of course. Each dome contains a single white brain, resting on the widened top of a tall pedestal, their atrophied bodies dangling in the pedestals' hollow centers. . . I saw one—the King of Thought—shortly after I arrived here."

With his curiosity still only partly satisfied, Don moved on with his little companion toward the Time Sphere. In a short time they reached it; it towered above them like an ominous gray shadow.

In the base of the sphere Don saw the only doorway he was to see during his stay in the Kingdom of Thought. It was an ordinary opening, exactly like a doorway, except that Don could see no way of closing it. Together they approached it, and with Gorg Merlo leading, entered.

Don stopped short, a sudden droning hubbub of voices checking him like a physical force. Here the throng of the streets was depicted on a large scale—but these men were talking, some in ordinary conversational tones, others in violent discussion—an incredibly jumbled confusion of strange tongues.

The utter strangeness of the spectacle impressed Don. The interior of the dull gray sphere, illuminated by a circular disc of yellow light in the ceiling; tiers upon tiers of wide gray steps completely encircling the wall, except where they were interrupted by the door. They started from the floor and rose up majestically almost halfway to the top of the sphere. In the center of the globe a towering pedestal with a widened top supported the Gray Brain whose image Don had seen out on the ice; and about it thronged men in all stages of evolution, of different races,

and clad in fantastic variations of costumes. Truly it was an amazing spectacle.

EXILES of Time. They were well named.

The motley gathering of men paid scant attention to the newcomers; a few of the nearer ones glanced in their direction as they entered, then ignored them. Gorg Merlo motioned toward one of the high steps, which apparently formed beds and seats for the Time Exiles.

As they approached it, there came a sharp, guttural growl from the throng, and a giant brute-man, fully as huge as Kwa, caught Don by the shoulder, spun him around, and sniffed at his reeking fur garments. His heavy lips drew back in a fearsome snarl, and he uttered a cry of mingled pain and rage. Before Don knew what it was all about, he was seized in a powerful grasp and was swung high above the brute-man's head!

Like a cat he squirmed in the mighty grip, striving to seize the other's arms. But those great hands held him in an iron grasp. An involuntary cry escaped him as he felt the fingers tighten and start toward the floor.

Then abruptly a huge, light-haired figure leaped from a small group of Time Exiles, and with one motion caught Don and the arms of his assailant, and wrapped his legs around the latter's hairy body. The three crashed to the floor in a tangled heap—and Don rolled free.

With a shout he sprang to his feet, his body crouched and his eyes blazing. A single, sweeping glance revealed Gorg Merlo rooted to the floor at a safe distance, the heterogeneous assembly of men ranged about him in a semi-circle, his unknown rescuer standing behind the slowly-rising brute-man,

a grim smile on his strong face—and he saw the snarling visage of his attacker, with bared fangs and blood-shot eyes.

Simultaneously they sprang, the one heavy, lumbering, thick muscled; the other quick, wiry, light-footed. They met with a solid impact, and Don's left arm drove out with whip-lash speed, his clenched fist cracking on the brute's face. The knuckles came away blood-stained, where the flesh had split on the high cheek bone.

Leaping back, Don waited. The hairy one followed with a sort of awkward, sprawling attack, and Don gave ground on tip-toe, both fists beating a rapid tattoo on his enemy's face, body and jaw. The other only bared his teeth, and his snarl grew louder. Not once did he attempt to strike a blow, but his long hands groped hungrily for a hold.

Suddenly Don changed his mode of attack. He rushed in, swung both fists heavily to the body, and, the force of his rush carrying him, clinched. Immediately he regretted the action, for a hand like hot steel tore at his throat, and another gripped his side, sinking deeper and deeper. With a tremendous straining effort he managed to wriggle one arm up and push his elbow into the corded neck of the other, who coughed in a strangled way as he hurled Don from him, stumbling after him to secure a new hold. The watchers yelled excitedly in many strange tongues. In and out the fighters swayed, Don retreating steadily, lashing home a crushing fist whenever opportunity presented itself. He knew that to come to grips with the brute-man a second time would almost certainly end the battle. His blows seemed to have little effect; but he had a plan.

With a sudden little backward spurt around the edge of the encircling mob, he widened the distance between them.

Crouching, he flung himself forward in a ferocious tackle, wrapped his arms around the other's legs. The huge bulk crashed to the smooth, hard floor with stunning force.

Don was on his knees in an instant, his expression one of anger and triumph. Viciously he buried his fingers, clawlike, in the monster's throat. Straining his wiry muscles, he raised the great head and body and beat them against the floor. The face below him contorted horribly with pain, and the great mouth jarred open, a choking gasp coming from between the yellow fangs.

Slowly Don's face cleared, and his grip relaxed. After all, he had no quarrel with this primitive man. He didn't even know why he had been attacked—unless this was a friend of Kwa. Quickly he arose, dragging his vanquished assailant with him.

"Have enough?" he demanded.

The savage looked at him for an instant with fear and hatred in his eyes; then he stumbled to his feet, turned and shamled away, losing himself in the crowd.

"**T**HUNDER of God, man, a goodly combat!" A deep, sonorous voice spoke behind Don Steele. "Not since far off Merry England have I seen better!"

Whirling, Don came face to face with the blond giant who had saved him from being dashed to the floor. Instantly he thrust out his hand, smiling broadly.

"Thanks, friend—if it hadn't been for you, there wouldn't've been a scrap. You stepped in when you were needed most."

The other caught the extended hand and wrung it, shaking his head in negation.

"Nay, friend; I but saw that fair play

was done. And if I had had my good sword, I'd have run him through, as a butcher spits his roast. But 'twere a shame to stain bright steel with the blood of a beast—and unnecessary, by the saints!"

Don smiled at the odd speech of his new-found friend, and very frankly surveyed him. The Englishman, he observed, was doing likewise for him.

Don saw a herculean figure in a sleeveless leather jacket with breeches of the same material. A heavy belt looped from his right shoulder to his left hip, supporting an empty sheath, designed to hold a mighty weapon. Thick, yellow hair; a high forehead that retreated at almost the same angle as the nose; lips somewhat compressed, but smiling now; a strong, square jaw—these completed the picture.

"I'm Don Steele," Don said cordially. "And what's your name, buddy? And how'd you happen to get here? How long ago?"

"Steele! A goodly name, in very sooth. I am Peter Northam, a maker of swords in London Town. Many a fine blade have I hammered out on my anvil. As for my coming to this accursed place—verily do I believe it to be black magic, the work of the devil! But a few days since, I labored beside my forge in free England in the year of our Lord, 1484; a little joust with four knaves on the highway, the flat of a sword on my skull; and now I am in this heathen land, surrounded by beings no man ever saw. Mayhap we're dead, and this is the devil's domain!"

He chuckled deep in his throat. "Thunder of God, it is good to hear words that can be understood—though the manner of your speech is passing strange."

Don smiled. "Looks like we're in the same boat, Peter. About five hundred

years between us—but that's only a drop in the bucket compared with the hop into time that both of us seem to have taken.

"**B**ROTHERS three!" the thought came from Gorg Merlo. "Peter, Don, and Gorg—brother Exiles in Time."

Don Steele and Peter Northam faced the little man with the great head. There was surprise on the Englishman's face, for he had received the thought, knew its source, but could not determine how it had come.

"The hairy one is the brother of Kwa whom you killed, Don; he recognized the furs. Better that you remove them, for you will have no need of them here."

While Don divested himself of the uncured hides, Gorg Merlo spoke to Peter Northam in his creaking voice. "Pet'r, there's much 'n this age ye can't und'stand—but jus' f'rget 't. I'll 'splain some things—th' res' 'gnore. Mos' 'f th' time I won' talk—jus' think th' mess'ge, but don't be puzzl'd; 't's quite natur'l. . . I'm Gorg Merlo."

The Englishman grinned, stretched out his hand, and grasped the other's diminutive one.

"M' lord Gorg, I am your man! In this mad place sane men must needs stand back to back." He indicated Don Steele. "This lad is much to my liking, albeit a little strange of speech, even as you are; and it is plain that a great and mighty brains fills your skull. So, as you wish it, I'll be brother to the twain of ye, I swear it i' God's name!"

Casting aside the heap of furs, Don nodded quickly. "It's a go!"

"I am agreed," Gorg Merlo added telepathically. "It is as it should be. . . But come; let us climb to the top of the steps; there I have my tools, and can

fashion a suit like mine for both of you while I explain things that you should know."

He led the way through the strange assemblage, up past men lounging on the steps, to the very top. There, beside a long, flat box of the same silvery metal that formed Gorg Merlo's garments, they sank down. Don looked at the box questioninglly. How was it that no one had molested it while its owner was away?

"It is a rule of the Keeper that no one may disturb the possessions of another," Gorg Merlo answered his thought, "and the Keeper's word is law. None can disobey even if they wish to do so."

Opening the box by pressing upon two of its corners, he took out a number of intricate tools and instruments, and a long bolt of silvery cloth. With these he set to work; and as his fingers began forming two costumes like his own for Don Steele and Peter Northam, his mind explained some of the mysteries of the Kingdom of Thought.

First, though handicapped by the Englishman's lack of basic knowledge, he strove to give him a conception of the Time Channel and the occurrence that had placed him in his present predicament. Then, with his broad, high forehead wrinkled in thought, he addressed them both.

"In order that you may fully comprehend my later statements I believe I had better start at the beginning—the *very* beginning of life on this earth. You, Peter, may be unable to grasp the meaning of some of my thoughts, but do not be concerned; the essentials will be clear.

"When dead matter began as a one-celled mass of protoplasm, it was almost as inert as matter—though, obviously, as in all matter, its molecules, atoms, and electrons were in motion. It

took a stationary form as if the vital impulse were too weak to risk the adventure of motion. But life was not content with a static existence; that was contrary to its nature; it began a slow change, a gradual growth, an advance away from the security of inaction toward freedom. At first that growth—evolution—was entirely a matter of instinct, a blind groping in the dark. For ages it was so.

"But after countless centuries of slow progress, life began to branch out along three lines of evolution. In one it relapsed into the torpor of plants whose sole aim was security; in another its spirit and effort concentrated and congealed into pure instinct—the insects; but in the vertebrate it took the dare of freedom, cast off its ready-made instincts, and ventured forth into the endless risks of thought!

"Centuries passed—centuries beyond number, while this slow, steady evolution continued. During that time instinct still remained, but intelligence grew ever stronger and bolder and wider in its scope. It began to exercise some control over the progress of men, weak, unconscious control at first, it is true—but it was the beginning of real progress. Before that impulse and desire were the active, though instinctive, forces in evolution; afterward it was mind—thought—that controlled.

"**L**ET us consider mind and thought. To begin, we perceive things through our senses—since we have not yet reached the point where intelligence can dispense with them. These tools I am using—they stimulate certain nerves, and I become aware of their existence and nature. Did that perception occur as an automatic action? No; the mind is necessary to receive and correlate these varied stimuli. The mind molds sensation into sense.

"Without mind to comprehend the messages our senses receive, the world would be, to us, an incredibly disordered place. Sounds, sights, sensations—all would be formless, without meaning. But mind works. It takes unorganized stimulus and re-forms it into sensation; sensation becomes organized into preception; preception becomes conception or knowledge; and knowledge is organized into science, or wisdom. Each is a greater degree of order, sequence, unity, brought about by mind and thought.

"**T**HE world, then, has order, not of itself, but because of thought that gives it order. And what is thought? A mere dance of molecules, or atoms, or electrons in the brain? No; electronic memory might not be beyond comprehension, like the 'fatigue' of overburdened metal; but how could there be electronic foresight, or electronic planning? Thought is the power that controls mind, the very life of mind, and the greatest force in the universe. Like all other forces thought obeys certain laws. And the laws of thought are also the laws of things, for things are known to us only through this thought that must obey these laws, since it and they are one.

"In this age, so remote that the sun is cooling, thought is approaching its apex. Ages must pass before even intelligent control of evolution can achieve the final goal of progress—pure, free intelligence, unhampered by anything physical—but these brains are drawing close to that goal. In you two instinct is still present to an appreciable degree; in me it has diminished; and in the Great Brains it is entirely absent. So powerful have their minds become, that matter, the physical world, is merely the material to be used for their ends, to be completely controlled by their intelligence and will. Everything—the

wall of energy, the phantoms, this globe, the domes, the food we eat—all are mental conceptions of the Great Brains, given physical form by the power of mind over matter!"

Gorg Merlo paused at the end of his lengthy dissertation on thought, his attention apparently fully centered on the garment almost complete in his hands.

Peter Northam laughed shortly in a puzzled sort of way. "Worthy Gorg," he said, "I am more ignorant of this mystery of which ye speak than the smallest child; I am unschooled, lacking in understanding—yet will I accept your statements as fact. Thunder of Goó! but thought is a wondrous thing; ye have proved it by your own unspoken words."

"And I'm afraid it's a little over my head, too," Don Steele added slowly. "But don't let it bother you. I get your drift—I think. But what about the Black Brains—and White Brains—and this gray one? Advanced forms of evolution, of course—but what's actually going on here? And where do we fit into the picture?"

"Yes; the white, black, and gray! The phantoms, and the Time Exiles!" The thoughts began flowing steadily again.

"When the mental being began to overcome the physical, evolution in vertebrates divided into two distinct groups, one engrossed in beauty and the glorious, undisturbed life of creative thinking; the other, more interested in what in your eras would be called evil. The former group chose to live in the sunlight, surrounded by beauty; the latter, in the dark places where nefarious deeds and creations were spawned by vile minds. Gradually, through the unending ages the gap between the two groups widened, and the differences in their natures grew more pronounced. And, since their minds controlled their evolu-

tion, one group became white, and the other became black.

"Between the two was unending warfare, the black beings striving constantly to destroy the white ones, and the latter always on the defensive. But the balance of power seemed to be with the brains whose thoughts dwelt upon beauty. Ages of warfare passed with the black attackers meeting defeat after defeat.

"AND finally, the Gray Brain came into being—as you may have surmised, apparently a cross between the two opposing races. How it happened, no one seems to know. Sex has vanished here as an active agent; the races are perpetuated, new beings created, by the power of thought. Yet it happened.

"The Gray Brain grew and gained power among the Whites. And since he had some of the Black within him, he was not content with mere resistance; he advocated attacking and exterminating the enemy. But the White Brains and the King of Thought could not view the matter as he did—it seemed so purposeless, they said. Finally, they compromised and gave the Gray Brain free rein in any enterprise he cared to attempt—so long as it did not interfere with them.

"Immediately he created this gray sphere, and began capturing men from various points in the Channel of Time. Some, like us three, were unfortunate enough to reach this age, and of course, were not permitted to leave. The Gray Brain became the Keeper of the Time Exiles.

"Then began a series of unusual battles between the two races. A vast horde of beings was created by the Keeper, counterparts of the Exiles, and launched upon the city of the Black Brains. The latter in turn created swarms of the most horrible monstrosities that could

be conceived by minds steeped for ages in thoughts of utter foulness. They battled, but, since they were only creations of the mind, with no actual result. Men were slain, beasts were slain; and in the end the bodies vanished.

"But the Keeper had a definite reason for these sham battles. On the inside walls of this sphere he projected a vision of all that occurred for the Time Exiles to see. And with each fight, in the hearts of the barbarians is stirred a battle-lust. After each such encounter the Keeper impresses upon the watchers the fact that the monstrosities they have seen are only mental creations, powerless to harm. For, once that truth is grasped, they really can do no harm; the mind of their foe renders them innocuous.

"Eventually, when the knowledge of the monsters' lack of power is firmly established, the Keeper plans an attack of both phantoms and living men—the living men can pass the black phantoms, and once they enter the Black City, victory is certain. Is everything clear?"

Peter Northam nodded. After a momentary hesitation Don Steele exclaimed:

"Clear enough—but something sounds fishy! Personally, if I were in the White Brains' shoes, I wouldn't trust this gray bird any further than my nose! I think—"

"Stop!" Gorg Merlo cried, an expression of actual fear flashing across his face. His hand leaped out and closed Don's mouth.

"Fool!" he exclaimed, his thin voice quivering with anger and dread. "Don't thing 't! Th' Keep'r knows y'r v'ry tho'ts!"

"Yes, he knows the thoughts of all of you!" A deep, ironic voice seemed to speak above them; and glancing up they saw a facsimile of the Gray Brain with its dangling, atrophied body. "An

excellent explanation of things, Gorg Merlo, truly excellent! I see, with the aid of your impetuous friend, you escaped the brute. Well—perhaps I shall amuse myself another time!”

A tangible wave of blighting force came from the tremendous brain, striking Don Steele with its full power.

“As for you, Donald Steele, I would speak to you alone—at once! Approach the central pillar!”

The voice ceased; the phantom brain vanished; and Don Steele strode slowly down the wide steps, and out through the sphere toward the colossal pillar in the center. His limbs moved against his will, jerkily, mechanically, like those of an automaton.

Gorg Merlo and Peter Northam watched him go with consternation in their eyes.

CHAPTER III

Brothers Three

“**T**HUNDER of God!” the Englishman growled, clenching his fists and gritting his teeth. “The man is bewitched! Methinks brother Don will need our help. Would that I had a good blade in my grasp!”

He sprang down the steps in Don Steele’s wake. A backward glance revealed Gorg Merlo at his heels.

Without looking to right or left, staring fixedly ahead, Don strode toward the pillar of the Gray Brain. He walked like a man hypnotized. His vacant eyes saw nothing of the men he passed, saw nothing of the assortment of strange weapons heaped about the base of the tall, gray post, yet he paused when he reached it. Behind him his two friends stopped short.

“I summoned only the first beast,” the wrathful thought reached Peter and Gorg. “Do you wish to share his fate?”

Peter Northam looked up at the huge,

membrane-incased mass of nerve tissue and smiled coolly. “Aye, m’lord, that we do. Whatever that fate may be—I make no doubt but what it would be better than our present company!”

The complete power of the Keeper’s thoughts swept over the intrepid Englishman, and he staggered. He raised his arms before his eyes, fighting the crushing weight of thought with all his will.

The instant the Gray Brain’s attention was transferred to Peter Northam, Don Steele’s face lost its vacuity, and he shook his head as though to clear away his mental fog. Abruptly he straightened, his eyes blazing with anger, and his jaw set at a pugnacious angle.

Gorg Merlo stood close by, his head bowed as though lost in deepest thought.

“You got me that time,” Don snarled at the Keeper, “but it won’t be so easy if you try it again! I’m not afraid of you—or any other fool like you!”

For an instant it seemed as though the Keeper would annihilate both Don and Peter, so terrible was the force of his wrath; but at the moment his attitude changed, became one of utter vindictiveness, of cold malice.

“So you would share each other’s fate, regardless of its nature? Ignorant brute minds!” The thought was filled with scorn. “That cannot be. You, Donald Steele, will be singularly honored. I shall permit you to visit the city of the Black Brains—alone—to learn of their plans! And, of course, with your fearlessness, you will have no difficulty in overcoming all opposition! As for you, Gorg Merlo and Peter Northam, you will . . .”

In the midst of his statement the Keeper’s thought ceased. The three waited, Gorg Merlo’s head still bowed, Don and Peter wondering what had caused the interruption. Suddenly the little man raised his head, a triumphant

smile on his thin lips. He flashed a thought to his friends:

"NOTHING to fear now; I have secured aid!"

For several moments longer they stared at the Keeper, waiting; then the thought of the latter reached them again. But now it was strangely subdued; it had lost some of its scorn and arrogance.

"The three of you will visit the Black City; it is my command. When you return, if you *can* return, report to me what you have learned. I have not yet finished with you! Now go!"

Don and Gorg Merlo turned on their heels, but Peter Northam was not ready to leave. He was busily surveying the heap of weapons. With mockery in his eyes he glanced up at the Keeper and bowed.

"A good blade is a friend whose value cannot be expressed in words," he said. "By your leave, m'lord, I shall find me one!" He continued his search for a few more moments, then cried suddenly: "Ah! the sword I made with my own hands! 'The Smiter'!" Sheathing the long weapon, he followed his waiting companions.

In silence they moved through the ill-assorted crowd. Men stepped aside to permit them to pass. Reaching the steps they mounted to the top, and at Gorg Merlo's mental direction, removed their clothes and donned the metal garments he had made. Not a word was spoken. Then, dressed alike, from skull cap to sandals, and surrounded by a dim veil of light, they strode toward the exit.

A strange, striking trio—Gorg Merlo, with his huge bald head and spindling body, in the lead; Don Steele, rather tall, a wiry, well developed athlete, behind him; and in the rear, Peter Northam, a blond haired giant with great, bulging muscles that rippled and surged under his skin with every movement.

Brains; brains and brawn; brawn!

Outside they paused. Curiously Don Steele turned to Gorg Merlo. "What did you do to make—him—change his plans? He certainly switched his ideas in a hurry."

The little man smiled. His thought came slowly: "I took what you would call a 'long chance'. You remember that I mentioned having seen the interior of one of these domes. I did so because one of these White Brains—the ruler of them all, the King of Thought—took a strange interest in me when I reached this time. He gave me all the information I have about the events and history of both races. I believe he has a plan in which I—and possibly you two—have a part.

"Hoping that the Keeper's thoughts were completely concentrated on you two, I strove to establish mental communication with the Thought King—and succeeded. He intervened in our behalf; and since the Gray Brain may do nothing that interferes with the others, he had to yield. It is the law."

Peter Northam grinned broadly. "By my sword, but it was good to see yon bloated knave bested. I fear him not a whit—though his thoughts are like a heavy blade striking a helmet squarely."

"You're right, Pete!" Don exclaimed, "they're all of that—only heavier. Anyway, we're still together—and I guess we'll be heading for the Black City. I don't think we could disobey that order if we tried."

Solemnly Gorg Merlo agreed. "No, we could not disobey. And that command is equivalent to a death sentence. There is nothing in the reasoning of the Black Brains but utter extinction for all life but their own. Fortunately they have ignored the Time Channel—or humanity would fall prey to a ghastly foe . . . However, we have one hope—the fact that the Great Brain, who

helped us, wants to see us before we leave. We are going there now."

SIDE by side they started through the silent throngs that filled the pale blue streets. The gleaming, gemlike domes colored the air about them with every hue of the rainbow. Despite the fact that they would soon be embarking upon an adventure in which they might be menaced by inconceivable danger, thoughts of the future left Don's mind in his wonder at the inexpressible beauty of the strange city. Only the gray sphere and the men in the streets were anomalies—the rest seemed to be the embodiment of harmony.

At first their progress was easy, but after a few moments the beings Don knew as phantoms, hemmed them in on every side. They seemed to have gathered from every part of the city, and were forcing themselves into an almost inextricable mass. Black, brown, yellow, white, they crowded the three friends. Finally, in desperation, Peter Northam began swinging his great fists in sledge-hammer blows, and a path cleared instantly. Then fists began swinging back at them.

"Remember," Gorg Merlo admonished, "they cannot injure you!" With that thought in mind they flung themselves into the strange group—and all opposition ceased instantly; they moved on unmolested.

"What caused this sudden attack, brother Gorg?" the Englishman asked. "And why stayed they their blows so soon? Thunder of God! I have little chance here to keep my muscles limbered. I grow as stiff as rusted armor."

Don Steele grinned happily. "Well, I think I distributed a few black eyes and split lips—if they show up on these babies!"

Gorg Merlo shook his head. "Have you forgotten that these—beings—are

but creations of the Keeper, and that he controls them? When he saw that he could not stop us, he ceased activities. And, of course, his tools stopped too."

At length they paused before a dome that shimmered like the gigantic fireopal it resembled, throbbing and pulsating as though it possessed life. It was larger than the other domes; Don remembered having seen it from the ice cliff. The home of the Thought King! Mutely they watched it, Don and Peter waiting for they knew not what. Then abruptly in the wall of the hemisphere a round opening appeared, an aperture large enough for them to pass through with ease.

Immediately Gorg Merlo entered; and an instant later he summoned his companions. Without hesitation they followed.

Surreptitiously Don glanced around the interior of the dome—a hemispherical hollow flooded with a soft, opalescent light. The apparent outward size of the structure had been deceptive; there was far more space within than he had thought possible. The dome and its central pillar seemed to be formed of a single mass; nowhere was there evidence of a joint or a break in the complete smoothness. The polished floor merged gradually with the curved wall and ceiling; the slender pillar as smoothly joined the floor—and even where the opening had been was only glass-smooth opalescence!

But the wonderful thing was not the building; its occupant was cause for genuine awe. A White Brain, white as whitest marble, resting on the gleaming support, outwardly very like the Keeper, though slightly larger; but here was an entity, an intelligence, that radiated a tremendous, benevolent power, a strength of will and thought, beside which that of the Gray Brain was insignificant!

AND suddenly Don surmised the cause of the latter's weakness; a half-caste, it embodied only the lesser powers of both races—semi-good, and semi-evil!

All this had flashed through his mind in an instant; the three were now ranged before the White Brain. A mist seemed to settle over them, a tenuous veil of energy—like the substance of the blue wall, it seemed to Don. Beyond that mist—nothing seemed to exist; utter silence, complete finality were within it; it seemed to be an isolated portion of creation, cut off from all extraneous things.

And protected, concealed by that veil, the thoughts of the Great Brain poured into the consciousness of the three. There were no words, as there had been when the Keeper addressed them; merely conceptions, complete, sentient pictures. First, a vast sense of reassurance, a benign feeling of peace, as though they were being incased in impregnable armor. There followed the knowledge that that security would remain with them during their visit to the Black City, protecting them—for that security was the thought of the King of Thought! Even the power of the Keeper could not penetrate that barrier, and read their minds.

There, for Don and Peter, the communication ended, though they knew that further knowledge was being given to Gorg Merlo. Finally, the mist lifted, and the little man's face was wreathed with smiles.

"What weapons do you desire, Don Steele?" he asked. "And you, Peter Northam?"

Don hesitated. "I suppose an automatic pistol would be best. But where—"

"Picture it!" came the curt command.

Immediately he centered his thoughts on an automatic and a belt of cartridges—and as quick as thought the weapon

hung in a holster fastened to a belt about his waist—created by the King of Thought! "Can you beat that!" he exclaimed. "Mind over matter—and how!"

The Englishman shook his head. "I want nothing but the 'The Smiter', brother Gorg," he said slowly.

"Very well, then; and now a weapon for me." With the thought there appeared hanging from the little man's wrist, at the end of a slender chain, a short black tube with a crystal ball at its free end. Another creation of the Great Brain!

"I think a slight change of costume will aid us when we reach the Black Pit." Suddenly each of their skull caps was transformed. A short black rod ran through it, like a supporting ridge of metal, with a crystal ball at its front end. It was an exact replica of the little man's weapon.

"Finally, food and drink." Don felt a sudden weight pressing on his back; knew it to be a knapsack; and he saw one appear simultaneously on the backs of Gorg and Peter. At their sides dangled a canteen, each fashioned according to the mode of their respective ages.

"We are equipped for a great venture, brothers," Gorg Merlo concluded. "We are guarded against—some things; but in others lies peril. Upon us may rest the fate of this civilization! We have been honored by the White Brains—yet in a sense are but pawns of the Black Ones—and we have a difficult task to perform! Let us go."

Wordlessly they passed through the circular opening that appeared before them as suddenly as it had vanished; then stopped short, eyes wide with wonder. For the pale blue, polished streets were completely deserted.

"I' God's name, this is a queer place!" Peter cried. "Wither have the men gone?"

Don laughed shortly. "Vanished, of course. Phantoms!"

And Gorg Merlo's piping voice concluded: "Th' Keep'r w's done with 'em, 'n they van'sh'd. He want'd freed'm 'f mind t' read our tho'ts—b't he can't do 't, ev'n now!"

Silence fell over them then, and they made their way through the brilliant, colorfully lighted streets, almost without sound. Reaching the pale blue wall at last, Gorg Merlo again communicated with them: "This wall could not be penetrated without the permission of every White Brain. If but one objected, it would remain impassable."

Apparently there was no objection, for an instant later they passed through the barrier, and as Don and Gorg had entered the city, so the three left it. Together, they set foot on the sheet of broken ice, tinted red by the rays of the setting, dying sun.

CHAPTER IV

A Night of Madness

THE darkness of night had fallen over the frozen world. Overhead, in the blue-black canopy of sky, twinkled countless stars—but there were no familiar constellations. Don noted this in wonder; it indicated an age so remote that even the so-called "fixed" stars had changed position!

In the east the moon was slowly rising—but a moon slightly smaller, more distant, than Don was accustomed to seeing; and the hidden sun tinted it, as it had the daylight sky, with its crimson rays. As it appeared, the wild grandeur of the ice field leaped into ragged relief. Long black shadows were cast by the fantastic ice hummocks that reared their heads toward the sky, like the towering ruins of Karnak, or the immense statues on Easter Island. Shorter masses of crystal stood all about

—a frozen army clad in armor of ice.

For more than an hour Don Steele, Peter Northam, and Gorg Merlo had been threading their slow way across the frozen plain. The wind howled past them incessantly, but thanks to their apparel, they did not feel the cold.

"Think you not, brothers," Peter Northam spoke after a long silence, "that it would be better to await the day? In this mad place there can be naught to guide us. And what matter a few short hours?"

"We are guided by the King of Thought, Peter," Gorg Merlo replied. "Our path is clear. If there were no need of haste I would gladly rest, for my body is weakest of the three—but speed is necessary. Besides, I fear that the Keeper of the Time Sphere will not permit us to go on unmolested; it will require endless vigilance on our part to thwart his plans. I think, since the Great Brain has commanded that we all go to the Black City, the Keeper does not want us to reach it. In fact, I know that such is the case."

"Right, as usual," Don agreed. "I don't trust that gray bird one little bit."

Silent then, they moved on across the shadowed wilderness, Peter Northam plodding stolidly, tirelessly; Gorg Merlo moving ahead with evident discomfort; and Don Steele swinging along with strong, athletic strides.

After a time their way led through a deep, wide gully in the ice. Rough, white walls loomed up on either side of them; only random rays of moonlight filtered down to dispel the shadows. They moved warily, feeling their way, Peter Northam still in the lead.

"Flash your light, Peter!" Gorg Merlo directed. "Foolish to grope through the darkness. Press the back of the rod in your cap."

But the Englishman ignored him;

with a sudden hoarse gasp he stopped short. "Brothers," he said slowly, "methinks the devil himself has been loosed from hell, and has come to plague us! I' God's name, dost see what lies before us?" He pointed into the darkness.

Don Steele stared—involuntarily muttered a curse. Instinctively his hand fell to the butt of his automatic. "What—what is it?"

Out of the shadows had crawled a shape, a monstrous thing like nothing any of them had ever seen. There was no resemblance to a body—only an upright mound of writhing, inch-thick cords like drab, white worms, that wound and twisted in and out incessantly! It moved toward them with an awful, gushing sound. As it approached the motionless three, they saw by a phosphorescent glow that came from the thing that every inch of its countless, twisting cords was dotted with tiny sucker-discs, opening and closing hungrily!

With a sharp exclamation Don Steele whipped out his automatic and emptied it into the monstrosity. At the same instant Peter Northam lashed out with his sword, cutting completely through the glowing horror. And it vanished!

"**H**AVE you forgotten the men thronging the streets of the White City?" Gorg Merlo inquired with dry humor in his thought. "Do not waste energy on a phantom! That is only the beginning; the Keeper will do all in his power to prevent our reaching the Black Ones, now that he cannot control us, and cannot read our thoughts. Come." He moved on through the gully.

"Thunder of God!" Peter muttered disgustedly as he flashed his light through the darkness. "In England worms are worms. And they stay in the earth where they belong! In very

sooth, here all is wildest madness."

Don was silent, as, mechanically, he put another clip into his pistol. And in silence they continued their journey. The nerves of at least two of the three were tautened, and their minds were filled with tense expectancy. Arriving at the end of the gully, they moved on across the ice field. Since it was no longer needed, the Englishman extinguished his light.

Don's mind was in a chaotic state; something was stirring his thoughts into a turmoil. Memories of his life before his journey through the time currents passed before him in orderly rows; after them came disconnected pictures of his present almost incredible adventures. And through it all, like the insidious writhing of a venomous snake, moved a note of dread, an unearthly fear of what the future would hold. Instinctively he shook off the unnatural sensation, but it returned with increasing force. Perhaps he had better turn and flee from the menace before him! Turn . . . run like a madman!

But before he ran, he'd better kill his two companions! Kill them at once, the vile traitors! They were conspiring against him—intended destroying him—fool that he had not realized it before! Shoot them in the back, that's what he'd do—then run, run to safety!

"Don Steele! Don Steele!" Through the growing veil of unreasoning fear and mad anger he dimly sensed his name. Something—someone was driving the thought into his brain. Why—that was Gorg Merlo! . . . Abruptly a tangible weight seemed to be lifted from his mind. He laughed shortly, bitterness and revulsion in his voice. "Almost had me that time! Murder you, then run—hell!"

"God's body!" Peter Northam mumbled. "You too? Almost I drew my sword to slay you, then turned and ran

like a cowardly milksop! *Pah!* I grow as mad as this world; and my blood is turning to water in my veins!"

The thoughts of Gorg Merlo reached them. "You must be on guard constantly. The Keeper cannot read our thoughts, but unless we strive to prevent it, he can force his thoughts into our minds. Now, thwarted in that, he will try something else."

At that instant, almost as though it were a direct answer to the thought, a great gray cloud obscured the face of the moon and much of the sky. It appeared out of nowhere and cast a cloak of thick darkness over the jagged ice sheet.

"Do not stop!" Gorg Merlo warned. "Lights, then your hand on my shoulder, Don, and yours, Peter, on his! Follow!"

Before they could obey, all about them countless tongues of scarlet flame flashed into being, springing out of the ice. They leaped and danced like sentient things; they sprang high into the air; they ran along the ice in rivulets of light. And before the three appeared a barrier of flame, its scarlet tongues licking out toward them hungrily!

With unfaltering stride Gorg Merlo approached it—and it retreated before him!

From the farthest ends of the frozen wilderness came the flame demons, leaping from ice hummock to towering pinnacle; flowing over the level places like sheets of scarlet water—and all poured into the barrier. Higher and higher it grew, wider and wider it spread, until it towered above the three Time Exiles like a mountain of living fire. All about, the sky and ice were aglow with the scarlet light—but light that radiated no heat.

Toward this gigantic wall of flame the three continued with their pace unaltered. But now it did not retreat; rather did it advance slowly to meet

them. No sign of perturbation came from Gorg Merlo; Don Steele's jaws were clamped together in defiance; and behind him, the Englishman muttered: "By the saints, I like this not at all!"

Now they had reached the scarlet terror—were within it—and it was gone! And with it vanished the cloud that obscured the moon.

"He is trying mightily to stop us," Gorg Merlo commented with relief, "but he will have to do better than that."

"WELL," Don said slowly, "I'll have to admit that the old Gray Brain has *some* tricks in his bag."

"Verily, brother Don," Peter Northam agreed fervently. "I make no doubt, were I alone, I would even now be breaking my neck on this treacherous ice, so rapidly would I be fleeing!" He sighed lugubriously. "I grow cowardly, I fear."

"No, Peter—it is not cowardice. The things are so unusual that they destroy your mental stability." Gorg Merlo paused. "But look; it seems that we will get very little rest."

The barrier of flame had reappeared in the distance, its brilliance somewhat dimmed now by the light of the moon. As the three watched, it divided itself into two equal parts; and each part, with the rapidity of thought, assumed the form of a gigantic scarlet pillar. A momentary pause—then from each pillar strode a colossal human figure clad in shimmering armor!

Across the ice they stalked, two incredible creations, like the Hindu Juggernaut car, grinding the life from its worshippers. Each was more than a hundred feet in height, and covered from head to feet with a scale-like sheathing of polished coppery metal. Even their faces were concealed by conical hoods, only two narrow slits

breaking their smoothness, where glittering eyes peered through.

But the really terrifying features of the armored giants were their feet—if feet they could be called. At the knees the lower limbs began to widen gradually, until, when they reached what should have been the feet, they had become crushing masses of armor-covered flesh and bone, fully eight yards wide at the base! Nor were they elongated; they were rounded, hooflike. And the giants were striding over the ice toward Gorg, Don and Peter, grinding flat the hummocks in their way!

"Remember," the little man admonished, "they cannot harm us! Ignore them."

"Oh, yeah?" Don Steele exclaimed. "Well, I'd feel safer if they weren't smashing the ice so thoroughly. I'm afraid my imagination is too active to permit me to convince myself that those babies are harmless! I think I'm going to take a couple of pot shots at their eyes."

The Englishman nodded. "Aye, brother; and a staunch bow with a few arrows would stand me in better stead now than 'The Smiter'!"

"**F**OOLS!" Gorg Merlo cried shrilly. "Wit' y'r fear y've giv'n 'em pow'r t' harm 's!"

The enormous strides of the huge figures had brought them perilously close. Raising his automatic, Don aimed carefully at one of the narrow slits in a hood, and fired. At the same instant Gorg Merlo flung up the black tube with its spherical, crystal tip that dangled at his wrist. There came two incredibly brilliant flashes, a thunderous detonation, and—the giants were gone!

With amazement and respect in their eyes, Don and Peter stared at the strange weapon. "What happened?"

"I set up a rapid atomic disintegra-

tion in them, and it destroyed them instantly," Gorg Merlo replied, then continued on another vein. "As you know, these creations of the Keeper have actual physical substance—but since they have no life, they can only act as their creator directs. However, if they are opposed by a fearless mind, they cannot follow his commands; after all, they are but tools. If you will remember that, we will have nothing to fear."

Again they resumed their journey. Occasionally one or the other spoke, but for the greater part of the time they were too busy with their thoughts for conversation.

Mile after mile they plodded across the ice; hour after hour passed, while the red-tinted moon crept across the sky. And nothing occurred. Slowly the minds of Don Steele and Peter Northam were lulled into a sense of security; they decided that the Gray Brain had abandoned his efforts to keep them from the Black City. And when their vigilance had relaxed entirely, when their sense of security was complete, the Keeper launched his most formidable attack!

One moment—orderly progress across the deserted ice. The next—pandemonium!

Out of nowhere appeared an endless horde of phantoms, in form like the Time Exiles, but with their numbers multiplied a hundredfold. All were armed with weapons of their day; hairy, primordial brutes bore huge clubs or rough stone axes—armored warriors with sword or javelin or bow, with scimitar or mace—men with rifles—men with strange weapons unlike any Don had ever seen. Like the phantoms in the Kingdom of Thought they were silent; and now their silence seemed a terrifying thing; it but accentuated the ferocity of their bearing. And the three were in the midst of the horde!

Across the ice to meet the phantom Time Exiles, slithered the monstrous army of the Black Brains. It was as though the spawn of Hell was vomiting out the unsealed pits of foulest night. Indescribable monstrosities of *dead* blackness—things of writhing tentacles, drooling viscid slime from horrifying, phosphorescent maws. Twisted, black abnormalities, like giant misshapen toads with glowing warts. Formless things—abominations that seemed to be foulness incarnate. Things of pale, naked phosphorescence with great, cold, glassy eyes that leered evilly, reflecting thoughts of infernal, sin-begotten madness. Gangrenous things, blotched with corruption; row upon row of living loathsomeness!

Shocking in its unearthly horror though the vanguard of the phantom army was, that very unearthly quality helped to destroy the illusion of reality. But the ranks behind them—they were incredibly repulsive because of their very familiarity! Rank upon rank they marched across the ice—forms that had no right to march! An army of the dead!

For endless seconds Don and Peter watched the enemy's approach, sick with horror, their eyes widened in amazement. Gone from their minds was all that Gorg Merlo had ever told them; gone even was the fact of his existence. Then suddenly the hordes of Gray Brain and Black crashed together; and Don and Peter were in the thick of the fray.

"Back to back, brother!" the Englishman cried; and a joyous shout rang from his lips as he whipped out his sword. "We know not friend from foe!"

"**R**IGHT!" Don's automatic was in his hand as, back against that of Northam, he faced the attacking hordes.

All was confusion. The ill-assorted forces of the Keeper flung themselves into the battle with utter abandon; and the nightmare army of the Black Brains battled with equal ferocity. The shapeless things of evil slithered back and forth, jitteringly, maddeningly, and engulfing every foe they touched. Their voices were the only ones raised during the struggle.

In an instant Don and Peter were lost in a mad mêlée of whirling, thrusting weapons. Blades of the past darted at them; weapons of their future sent torrents of fire cascading on every side, sent balls of singing light hissing toward the enemy, sent stabbing, searing rays through phantom Time Exiles!

Don's automatic crashed again and again; and Peter's great sword hummed about his head in a halo of light, cutting down his attackers like trees in a tornado. There was no time for thought; reason vanished in the utter madness of the combat. A red haze settled over Don's mind—a fiery screen in which danced a multitude of devils that must be killed, killed, killed!

After a time he came to a slow realization that he was separated from the Englishman, and that he no longer held his automatic. The weapon hung in its holster. Instead, from somewhere he had secured a bloody, wicked, razor-edged scimitar, and in the fiery lust of battle he was slashing back and forth like one possessed of a demon.

And his foes! Not the phantom Time Exiles, but the ranks of the dead! They hemmed him in on every side, cutting at him with weapons of every description.

In his revulsion Don almost dropped his weapon. A darting blade in the hand of a fleshless skeleton burned into his side—like a flash the blood-reddened scimitar leaped into action, almost as though it possessed life. A madman,

Don tore into the hideous hoste. His breath was coming in great gasps, but he was filled with a blind anger that gave heed to nothing save the foul things surrounding him.

At length Don became aware that his gruesome foes no longer beset him so thickly. He stood in the midst of a clear space. He laughed softly, deep in his throat, an insane, croaking sound. They couldn't escape him, damn them!

He dashed toward the battling horde, heedlessly passing thick-strewn, mangled dead. Dimly he noticed a strangely familiar figure seated on an ice hummock with head bowed—then he sprang eagerly to meet a blond giant who ran out of the seething mass waving a great sword.

Their blades crossed. During the first few moments Don made up for his lack of skill with the awkward, curved blade by the very fury of his insane onslaught, but afterward he gave ground steadily. By instinct alone he parried the vicious thrusts and lunges. Slowly the peril of his position forced itself upon his consciousness, freed his mind of its madness. At the instant that his opponent's heavy blade flashed toward his head, his sight and reason cleared, and he gasped the single word:

"Peter Northam!"

Vision of a startled, incredulous face; then a cloud of blackness engulfed him.

"DON! Brother Don! Awaken!" A faint, frantic voice pierced the cloud of senselessness. "I' God's name, speak! Say I have not slain ye!"

A calm, clear thought followed, from the mind of Gorg Merlo. "There is no danger, Peter. Even now his senses are returning. See; his eyelids move."

Don Steele opened his eyes and stared blankly around. The faces of his two friends were above him, the one anxious, the other calm and unruffled.

Suddenly he remembered. The battle of the phantoms; those horrible dead things; his fight with Peter Northam! But now the ice wilderness was deserted, save for the three of them. No mangled dead—not even blood! . . . But, of course; they were phantoms—and phantomlike, had vanished.

He staggered slowly to his feet, assisted by Peter Northam. His head was throbbing painfully, and there was a dull ache in his side, but he smiled faintly.

"Good scrap, eh, Pete? While it lasted. But that damned Keeper almost pulled it that time!"

The Englishman's face was wreathed with smiles. "Thunder of God, Don, but I thought I had slain you! 'Twas the madness. Verily, we fought with unseeing eyes. I checked that last blow as best I could, yet the flat of my sword glanced from your skull cap. I fear, had I not heard your cry, your blood would even now be on my hands."

"Forget it!" Don's old spirit was returning. He shrugged his shoulders deprecatingly. "What's done is done. Let's be moving."

"Before we continue our journey, there is something I would say." There was a note of impatience in Gorg Merlo's thoughts. "I suppose I am expecting too much from your primitive minds, but *please* try to remember that these phantoms are harmless! While you two were fighting for your lives, I sat on an ice hummock striving to make you recover your reason to save you from yourselves. You did just what the Keeper wished you to do. Such an attitude of mind in the Black City would result in instant death. Of course, there you will be protected by the Thought King. Still, you should be more careful."

"I know we're at fault," Don answered shamefacedly. "But the things

seem so real . . . And you must not forget that there are ages of evolution between us and you."

Relenting to some degree, Gorg Merlo nodded. "True. But try to remember in the future. . . . Now, your wounds."

Carefully he examined the gash in Don's side and the bruise on his head. "Jus' scratch's," he spoke finally. "We'll fix 'm 'n a h'rry." He bowed his head in thought.

In wonder Don and Peter watched him; then abruptly the former realized that the pain was gone! Before he could voice a query, his answer came from Gorg Merlo.

"Mind over matter. I communicated with the King of Thought, and he cured you." He paused. "Let us go. I think the Keeper has used his most effective weapon—and failed. We will go the remainder of the way unmolested."

Wordlessly they continued their journey across the ice.

CHAPTER V

In the Black City

LONG, weary miles lay behind the three Time Exiles, miles of steady progress across a frozen world. Now they were resting at the base of a tall, conical, ice-clad mountain, awaiting the dawn.

Day came swiftly in a riotous blaze of color. Along the jagged eastern horizon appeared a long line of vivid crimson, the brilliant rays dispelling the gray of the nocturnal sky. It broadened, spread fanwise across the heavens.

Away from the base of the mountain stretched the field of ice, tumbled millions of upright pinnacles extending on and on to vanish in the distance. These reflected the crimson light of the sky; became giant flaming candles on a mad

birthday cake. Then, over this world of crimson splendor, the red sun slowly rose, tinging the sky from horizon to horizon with its light. The new day had begun.

With one accord the three arose from their seats on the ice. Don Steele waved his hand toward the sky, and grinned.

"Then came the dawn!" he exclaimed.

Peter Northam sighed. "Verily, never have I seen so brilliant a sunrise! Methinks some of the accursed devils we saw in the night would flee from so beautiful a sight."

Gorg Merlo was business-like; he ignored the scenic wonders. "We are about to start on the most dangerous part of our mission. Within the mountain, as I told you when we reached it, lies the Black City. After we climb to the top of the peak, we will be under the control of the King of Thought in every way. I have certain plans that we must follow, and he will guide us in their execution. Even our thoughts will be controlled by him. No matter what we think, the Blacks will learn only that which the Great Brain wants them to learn. For each of us he will create a false mentality. Even now our minds are shielded from them—and because of that shielding I do not believe they know that we are here. The Keeper may have—but that is purely conjecture; forget it."

He removed his skull cap and slipped out the black rod that formed a ridge through its center. "We have reached the place where we are to use the rods in our caps. Mine I will discard and replace with my disintegrator. Yours are lamps—we will need them in the Black City. Back on the plain I had forgotten that I had not explained their use to you. You operate the lights by pressing the little knob on the back end." He returned the altered cap to his head. "I conceal my weapon be-

cause, if the Blacks knew of its existence, they would destroy it. Your weapons they will consider too harmless to be noticed."

His thoughts assumed the crispness of audible speech. "One fact more—then we start. The White Brains are using us as a means of entering the Black City—something that has not been accomplished in ages. If the Thought King's plan materializes, it will mean the destruction of every Black Brain on the planet! Come." He turned and started up the mountain-side. As Don followed, he reloaded his automatic. His last clip. It might be useful.

Slowly the three made their way up the rough incline. The journey over the jagged plain had been easy compared with this. And now they were weary from their exertions during the night. But finally, despite much slipping and floundering, they surmounted the last precipitous obstacle and stood on the mountain-top beside a great, black pit—what had evidently been the mouth of a volcano.

CURIOSLY Don Steele leaned over the edge of the pit—and drew back, startled, an unreasoning fear upon him. Out of the blackness had come a blast of damp, chilling air; not the clean cold of the winds that swept the plain, but a breath of icy foulness. Musty, somehow age-old, it had an unearthly, cavernous smell. He felt an unaccountable loathing, a sense of repugnance. As he drew back, he shuddered in spite of himself.

He faced Gorg Merlo and Peter Northam—and at that instant, as though a gigantic hand had gripped him, he felt the power of the King of Thought. A sudden tide of utter fearlessness, a sense of tremendous power, wisdom beyond conception—all these pulsed through him, as inner monitors.

He saw an expression of wonder flit across the Englishman's face. "Never did man feel so," he muttered.

A swift thought came from Gorg Merlo. "To action!"

The three stepped to the edge of the pit and stared down into its black depths. But now Don experienced none of that unreasoning fear that had gripped him before; he was only aware that a steady thought was leaving him, repeated again and again: "We come from the Keeper of the Time Sphere, the Gray Brain." And he knew somehow that the same thought was being sent out by the others, impelled by the power of the Thought King.

Far down in the pit something moved—a vague, indefinite stirring in the darkness. First, only a shadow among shadows; then slowly, as the three watched, it began to glow with the ghastly cold light that had shone from the eyes of the monster horde on the previous night. The thing—it could be called nothing else—was almost shapeless, a mass of slow-moving tentacles and undulating billows of transparent, jellylike protoplasm. Paradoxically, despite its transparency, it was black, yet the blackness had a peculiar light-giving quality.

Up from the mass stretched three great arms, moving slowly, with deadly deliberation toward Don, Peter and Gorg. They watched with curious eyes, unflinching, for under the control of the Great Brain they knew it for the phantom it was.

The pseudopods touched them caressingly—and they relaxed in their clammy clutch; Down into the black pit they were drawn, unresisting, slowly, endlessly down, a thousand feet or more, into a place of whispered blasphemies, of foul, half-suggested shapes of hell in unmeasured depths of intangible shadows.

They felt something solid beneath them—and abruptly the viscid, clutching arms were gone, and with them, the monstrous creature of which they were a part. They were standing on the floor of the pit in absolute blackness.

MINUTES passed—and there was no sound or motion. The Time Exiles remained standing where they had landed, their nerves and muscles held in rigid restraint. They could dimly sense a presence in the room; the inner voice told them this was a test.

Suddenly a sardonic laugh broke the silence, and a deep, mocking voice addressed them “So you have been sent by the Gray One, eh? For information! We knew of your coming—and we are prepared to show you every hospitality! Every hospitality—as the Gray One directed!” A second peal of laughter rolled through the darkness.

Don Steele received his cue from his inner guide and acted accordingly. His was the part of defiance.

“Well, I don’t see any signs of hospitality!” he exclaimed. “What’s the idea of letting us stand here in the dark? I should think—”

Abruptly they blinked in a glare of brilliant light. It appeared—and vanished instantly. But in that moment they saw a huge, naked Black Brain floating in the air beside them with its atrophied black body dangling beneath it; saw countless avenues of endless night, radiating in every direction, endless thoroughfares that twisted through labyrinthine windings, lined by ugly, squat, distorted structures—the dwellings of the Blacks; saw nameless things of festering evil, hidden monstrosities that kept ward over this abode of dread.

Again the Black Brain communicated with them—but now it used no voice, and the mockery was gone from its thought, replaced by utter hatred.

“Enough of nonsense! So you come from the Gray Brain—but not before you visited the accursed King of the Whites! Fools! Fools! Fools! Think you we know nothing?” The crushing weight of the being’s thought swept over the three with far greater power than that of the Keeper; it pressed them back like a physical force, drove them far along a pitchy avenue into the heart of the Black City.

“When you are wanted, you will come. And when you are no longer wanted, you will go—over a road not pleasant to travel! And it does not lead back to the White Fools!” There followed a torrent of vicious invective, then the absence of all extraneous thought, and a silence like that of the living dead in the land of the dead-alive.

Gorg Merlo’s thought came to Don Steele and Peter Northam. “All about us are the Black Brains, and we must expect all kinds of manifestations of their thoughts. In the knowledge given us by the White Brains we can ignore their terrors. Thus far everything has gone according to the Thought King’s plan. From this point I am his mouthpiece—since I am most capable of understanding the portent of his commands. You will follow my instructions—though all three of us are still under his complete control.”

Don and Peter had known that this would happen; they acquiesced immediately. As agreement flashed through their minds, a faint, agonized moan came to their ears. It was followed by an insane croaking, by hideous howls—the mad mockery of a dying demon!

“**Q**UICK, Peter, flash your light!” Gorg Merlo’s thought came jerkily. “They cannot stand it . . . Rapid action now . . . Straight ahead along the avenue!”

A beam of brilliant white leaped from

the crystal sphere on the Englishman's skull cap, cutting the darkness for hundreds of feet. Blinking in the glare, the three dashed ahead, past a squirming abomination that screamed with the pain that the light inflicted. The dull black surface of the thorofare seemed to absorb the sound of their footfalls; in silence they ran between the squat, shadowed dwellings that housed the Black Ones.

In the distance their beam revealed a structure more imposing than the rest—and, if that were possible, it seemed cloaked in a blackness more intense than any they had ever seen. It seemed to emit a tangible foulness—an echo of the musty, age-old iciness that had struck Don as he first leaned over the black pit.

"Stop!" Suddenly, out of the air had come the single, compelling word. A wave of paralysis halted Don, Gorg and Peter in their tracks. The Englishman's light winked into darkness, useless, burned-out. The three became aware of a mighty intellect probing into their minds, searching out every vagrant thought.

Gritting his teeth, Don hoped fervently that their protector would prove equal to the occasion, for they could do nothing to check this questioning brain.

After long minutes the tension relaxed, and they felt some of the vast power withdrawn. The King of the Whites had deceived the Ruler of the Blacks! That knowledge gave them confidence.

"Approach, honored messengers of the White Ones!" There was a ponderous humor in the command, an evil gloating, as of some ferocious carnivore playing with a mouse.

Obediently yet slowly the Time Exiles moved toward the building of black abomination from which the thought had come. Though they felt no fear,

they realized that the White Brain was causing them to cringe, to shrink back in abject cowardice. The amusement of the summoning being increased. Fearfully they passed through an opening like the empty socket of an eye and stood in total darkness before the Black Ruler.

A slow, dim radiance began to dispel the darkness, the cold phosphorescence that seemed to be the normal light of the Black City. At length they were able to see their surroundings—the dull black walls of the building that appeared to project upward at a grotesque, unnatural angle—like walls seen through a prism! But the strangeness of the building was as nothing beside the sight of the monstrous Black Brain on its twisted ebony pedestal.

It was not so much its physical appearance; it differed from the White Brains only in its color. Rather was it the veil of demoniacal power that hung about it like a cloud. That black cloud was almost material; it conjured up visions of incredible evil, of heartless cruelties, of unleashed crime. In the dome of the Thought King there had been a sense of tremendous power, even greater than this—but where that had been a creative power, benevolent, and kindly, this was destructive, malevolent, devilish.

Don Steele shuddered inwardly; dimly sensed the thought of Peter Northam. "May the Mother of God preserve us!" The cringing fear, that their bodies simulated at the command of the White Brain—was not without actual emotional basis now.

"WELCOME," the Black Ruler addressed them with ironic joviality. "So you come from him whom you call the Keeper of the Time Sphere—and the accursed Whites!" For an instant his thought reeked with miasmic

hate—then it was gone. "You come as tools, as spies! Truly, they are losing their mental powers, to put faith in so hopeless a plan! You three, with only the faintest glimmerings of intelligence, to learn our intentions! I have read your thoughts, bared your every idea, and before I annihilate you, I shall show you what you came to learn! The great destruction will have watchers! You shall see the complete wiping out of all life save our own—the only real intelligence! The time has arrived."

The dim phosphorescence in the room vanished, leaving a single square section of one of the walls glowing. The light of that section increased in intensity, and suddenly it mirrored the familiar spectacle of the gray Time Sphere in the City of Thought!

It was a scene of unusual activity. All about the massive globe were throngs of men—the Exiles of Time, now; not their phantom counterparts. All were armed with their own weapons, and a current of excitement seemed to be running through them.

"The beasts are preparing for an attack on our little playthings—and afterward, so the White Fools think, on us. They have not intelligence enough to realize it is a trap. *I* planted the Gray One in their midst! *I* planned this sham attack. The gathering of the beasts like yourselves, all of those sham battles—they are a part of my plan! Always have we been hampered in our attacks on the White City by that barrier of energy—but now it will be lowered! For the sake of strategy, so the Gray One has told them, the beasts will be loosed from different parts of the wall. When it is opened to permit their passing, our boys will attack on the ice above, and during the excitement we will charge! Watch."

The Time Exiles were spreading out along the base of the pale blue barrier

now. Above them hovered the Keeper in a transparent gray globe. When all were in position—the strangest army ever assembled—they stepped into the misty wall as one man.

"My forces are ready." The thought reached the three watchers. "From here I shall superintend the attack. Now the phantom army forms."

Among the ice hummocks suddenly appeared the ghastly horde of the dead, led by the revolting creatures of cold light and blackness. They were motionless, awaiting the departure of the Time Exiles from the city.

Suddenly the watchers saw the Black Brains, countless specks drifting far up in the crimson sky, high above the assembled armies, waiting like vultures to flash with the speed of thought through the opened barrier.

Now the Time Exiles were rising through the blue wall. To Don Steele their progress seemed maddeningly slow. The ghastly phantoms began creeping toward them. The men reached the top, stepped out on the ice—and suddenly, within the room, came a blinding flash of light and a thunderous crash! The scene on the wall vanished in darkness!

An instant of stunned silence—then the thought of Gorg Merlo came to Don and Peter. "Light, quick!"

Mechanically Don pressed the back of the black tube in his cap, filling the room with radiance. Dazedly he stared around.

The ruler of the Black Brains was gone, exploded into atoms. A strange electrical tension hung on the air; the roar still reverberated in the distance; and Gorg Merlo held a little black tube in his hand.

"Thunder of God!" cried Peter Northam. "Thunder of God!"

Abruptly Don Steele realized that another change had taken place. . . . The control of the Thought King was gone;

it had vanished with the Black Ruler. They had to fight their own way now. His attention was taken up, in all probability, by the fight that must be in progress out on the ice.

"H'rry!" The little man's piping voice galvanized them into action. "We're 'lone now, b't th'r's still much t' do!"

With one accord they sprang through the opening in the black wall.

CHAPTER VI

The Battle of the Brains

THE Black City seemed empty, lifeless as a tomb on Resurrection Day. The shadowed, winding streets were lined by deserted shells, bodies from which evil souls had flown. Even the lurking phantom monstrosities had vanished with their creators.

Hawk-eyed, Don Steele stared around, his automatic tight-clutched in his hand. Peter Northam crouched at his side gripping the hilt of his sword.

"Seems deserted," Don remarked. "Thought I might have the fun of blasting a couple of the black babies into Kingdom Come."

"Verily," the Englishman groaned, "this place is accursed of God and the devil! Seems I cannot keep my muscles free; they grow old and stiff from inaction."

"Perhaps, brothers, you will have more chance for action than you imagine." Gorg Merlo was grave. "At least, more danger lies before us. And we have need of haste!"

Running as swiftly as his short legs could carry him, he started through the dreary city, his disintegrator ready in his hand. Keeping pace with him, Don's brilliant lamp lighting the way, the other two followed. After a few moments of running, the giant Englishman exclaimed:

"I have a better plan—we can go

faster if I carry you." And without waiting for his consent, he swung Gorg Merlo up on his broad back. They increased their speed perceptibly. And from his vantage point the little man guided them.

On and on they ran, winding in and out endlessly, on and on through a city that was dead. After a time their pace began to slow down and their breath came heavily. Their long walk on the preceding night, and their lack of sleep was beginning to take its toll. Finally Peter gasped:

"Whither are we going, brother Gorg? What must we do? My legs grow weary."

"I believe we are almost there. We have to reach the inside wall of this place and cut a way out—and we must do it before any Black Ones return!"

They ran on in silence, their eyes alert for sight of the wall. The thought of its nearness spurred them on to extra effort.

"There it is!" Don cried at last as his beam rested on a great expanse of dull black rock. "And it's as welcome as the flowers in May!"

They stopped short, Peter Northam lowering the little man to the floor. Without delay the latter trained his weapon upon the wall directly before them, pressed on its end—and from the crystal globe poured a hurricane of lightning flashes, blasts of annihilating energy that crumbled to nothingness the substance of the wall! Volley after volley struck it, a veritable hail of fiery destruction. Blinded and deafened, Don and Peter watched the flaming torrents cleave the side of the hollow mountain.

Rapidly the aperture widened, biting deeper into the black rock. Interminably that lightning hurricane poured forth; interminably the chaotic clamor continued—and suddenly the brilliant glare was dimmed by the light of day as it

streamed in through the gigantic rift in the rock!

The blasting ceased. Don and Peter turned to Gorg Merlo; saw that he was staring fixedly at the ugly cleft. Their gaze followed his—simultaneously they uttered a startled exclamation. The rain of lightnings had stopped—yet the aperture was *still growing!*

"THUNDER of God, Gorg! What has happened?"

"By gad, you—it hasn't gotten out of control, has it?"

The little man shook his massive head. "No; as I told you before, this rod sets up rapid disintegration in matter. It sends forth a charge that automatically adjusts itself to the frequency of any form of solid, literally shaking it to the impalpable dust of its molecules. And once that disintegration is started, it will continue in that particular form of matter until the entire mass is consumed, regardless of its size. The Brains, White and Black, can stop its action with their control over matter—and that is one reason why haste was necessary. There is a further cause for speed even now—we must go through that opening before the mountain crashes down on us! Now!"

"But, m' lord Gorg," Peter Northam objected, "will it not affect us?"

"No; hurry!"

Together they dashed toward the opening, far larger now than it had been a few moments before. Don saw that wall was vanishing with unbelievable speed; its destruction seemed to be accelerating. The floor of the cleft was in constant motion, sinking deeper and deeper into the earth, as its matter vanished.

They were out on it now, running frantically over a surface that fell rapidly away beneath their feet. It seemed as though the dizzying flight would

never end. Finally, however, they clambered out on the other side to the safety of the ice.

They looked back. Unless something interfered in a very few moments the Black City was doomed. . . But what—Suddenly Don pointed. "Look at the ice—it's going too!"

"Yes; I had to cut through both, and the ice is disintegrating just like the rock. But we need not fear that. The White Ones will stop it before it can do any great damage. But there is one thing we should fear—the fleeing Blacks. If they check the destruction, our work will have been useless—unless they are so weakened that their wills can form no obstacle to those of the Whites. And if they see us, they will destroy us instantly."

"Then, brother Gorg," Peter cried, "use that thunder rod of yours on yon scurvy knave. He comes on apace!"

Gorg Merlo whirled, paused a fraction of a second, then fired. A lance of light cut the air—a clap like thunder—and where a Black Brain in a transparent black globe had been flashing toward them, was—nothing! Not a moment too soon had he acted, for about them had appeared the nebulous form of a solid sphere—a sphere that had vanished with the being that conceived it!

From behind them came a dull rumble—then the crash of tons of falling rocks! Whirling, they saw the hollow shell of the mountain crumble and fall into an enormous crevice. That steady disintegration continued hungrily.

"We're too close," Gorg Merlo flashed the thought to his companions. "Out on the plain!"

They turned and ran rapidly across the field of ice. When they thought they had reached a position of safety they halted.

Suddenly Don pointed upward.

"They're coming thick and fast now. The whole battle's moving our way."

It was true. The Black Brains were retreating toward them, fighting with every power at their command each foot of the way. Already they had come a great distance, else they would not have been visible. Like a great cloud their globes hung together—the combined power of a race of giant evil intellects. Driving them were the myriads of White Brains in similar white globes—a glittering cloud. And between them—the battlefield of the Brains!

The air was rent and torn by forces and powers beyond the comprehension of at least two of the watchers. Globes of searing fire, red, yellow, and blue, mingled with irregular masses of blackest shadow; stabbing beams of radiance crossed rays of lurid fire, swords of giant duelists; solids formed and vanished again and again—crushing, rushing, battering rams of matter. Other things—intense heat, frigid cold; whirling blades, grinding metal jaws; storms of dust, rains of slime—were formed as needed, then were forgotten. Horrible creations came and went endlessly, impotent in this roaring aerial amphitheatre of hell. And all was mingled in a chaos of indescribable sound, a din like that of warring worlds.

RAPIDLY the ranks of the Black Brains were thinning. Even now, they were falling more and more on the defensive, and their numbers seemed to be decreasing steadily; they had less than half the power of their destroyers.

A sudden maneuver, rapid as thought—and the White Brains ringed the Blacks in a wide circle, pouring in upon them all the tremendous strength of their gigantic intellects! Before that onslaught the battle became an utter rout, black spheres with bewildered oc-

cupants darting back and forth helplessly. Suddenly, without semblance of order they tried to flee—but only stragglers escaped from that engulfing ring.

"Thunder of God! Why can't we get into that battle?" Peter Northam's eyes sparkled with excitement. "Though I fear 'The Smiter' would be rather useless," he added dolefully.

"At least, I can do something!" Gorg Merlo raised his black rod. Again and again, when a Black Brain came within range, it flashed a lance of lightning that blasted them into nothingness.

Don Steele ground his teeth impotently. His automatic was in his hand—but what could he do with so puny a weapon!

Unbidden, a question occurred to him. What of the Time Exiles? Surely the Blacks no longer gave thought to their fearsome hordes; they needed all their mental power for their own battle. It seemed likely that those unfortunates from out of the ages were wandering bewildered over the ice—unless they had started fighting among themselves! Well, if there were any survivors, the King of Thought would probably return them to their own time, when this was over.

Suddenly, cutting short his soliloquy, there flashed out of the mass of darting globes an object that was strangely familiar. It sped directly toward Don, Gorg and Peter, something vengeful in its attitude. The Gray Brain! And from it leaped beam after beam of lurid flame!

As one the three fell back—and abruptly the ice gave way beneath their feet, ice that was disintegrating rapidly, destruction that had crept upon them in utter silence! The beam passed harmlessly over their heads. Falling, Don pointed his automatic upward and fired into a fitting gray shadow . . . Beside him, a lance of lightning flashed sky-

ward—and as the Keeper of the Time Sphere fell, he vanished! Annihilated!

Striving helplessly to right themselves on dangerously sloping ice that shrank steadily away, Don and Gorg felt powerful hands clutch them and drag them to safety.

"I' God's name, run!" It was the Englishman. "Look—yon mount is completely gone!"

They glanced behind them—saw a vast, empty pit that grew wider with each passing instant. Without thought of the battle that still raged in the sky, they dashed across the ice, away from the silent menace.

As they drew near to the battle zone, they felt the powerful fingers of a newly formed wind clutch at them. Always there was wind on the ice—but now it had increased beyond all precedent. Those hurricane forces in the sky above had destroyed the normal balance of things. Whirling eddies of frigid air mingled with currents heated to torrid warmth; rapidly, as they advanced, that wind arose to the proportions of a gale. But they ran on unheeding, away from the edge of the disintegrating ice.

Abruptly the aerial battlefield shifted, as the Black survivors made a final attempt for freedom. They were above the three—and at that instant a roaring cyclone caught them and whirled them upward and away at a mad pace! Don caught a fleeting glimpse of his two companions, being borne away, the great arms of Peter Northam about diminutive Gorg Merlo—then he saw nothing but a madly gyrating world of jagged ice and red-tinted sky. Mile on mile he whirled—a dead leaf in a gale.

The blood was roaring in his ears—a terrible nausea racked him—and he knew he was losing his senses!

A shattering roar in the background somewhere; flashing spangles of light;

an agony of numbing pain—and complete extinction blotted out the consciousness of Don Steele.

CHAPTER VII

A Broken Window Pane

"GOOD night! Did yuh see him skid? Hit that pole like nobody's business!"

"Yeh. Wonder if it killed him—goin' through a big winder like this! But, say, did you ever see anybody dressed so funny? All over silver—or somethin'! Must be goin' to a party."

"Sure is nutsy."

Dimly, as through a haze, Don Steele heard voices—childish voices athrill with curiosity. He opened his eyes, blinked dazedly, then as sudden recollection flashed through his mind, he sat up.

He remembered now—that wet, slippery street, his car skidding—and he had gone through this plate glass window! It was a miracle he hadn't been killed! Splinters of broken glass lay here and there amid a confusion of scattered women's apparel.

He rose slowly to his feet; gingerly touched a long gash in his cheek. Queer—clotting blood had already closed it! He hesitated, then stepped through the jagged hole in the glass, out on the wet pavement. A fine drizzle was falling, and through the night, in his direction, ran a blue-coated figure swinging a club.

"Are—are yuh hurted, mister?" It was one of the boys.

Don shook his head. "No, sonny, I'm all right." He stared at the wreckage of his open car, glanced through the store window, then surveyed his own figure—and gasped audibly. A suit of woven metal, like finest chain mail!

In a flash he remembered; the metal costume was the key to complete recol-

lection. The Time Channel . . . Peter Northam and Gorg Merlo in the world of ice. . . White Brains and Black . . . The battle, the cyclone, and this. . . He wondered what had happened to Peter and Gorg!

The policeman had almost reached him now. He'd have to snap out of his daze. What should he do?

"What's goin' on here?" the heavy paunched figure asked gruffly. "Drivin' while drunk, hey? An' what's the big idea wearin' iron clothes—think it's Hallowe'en? . . . An' a gun! Hmmm! Breakin' the Sullivan law!"

Don's jaw thrust out at a pugnacious angle. He didn't like that truculent tone. "Nothing much going on," he said slowly, "but there will be!" And with a vicious snap, his fist lashed up and collided with the blue-coat's jaw.

He sank heavily to the pavement. A squeal of delight from the boys, then Don Steele was dashing along the dark, deserted street. People were approaching from the other direction, drawn by the disturbance. He didn't want to see them. His home was only a square away; he'd explain things tomorrow when he felt more like explaining. They'd trace him by means of the car, of course. But he didn't care. He'd plead temporary insanity, or something.

Tomorrow, and the next day, and the next, meant a humdrum existence behind the teller's bars in a bank! To hell with it all! He wanted to be somewhere in the future beside a little man with a big head, and a brawny, blond-haired giant—Gorg Merlo and Peter Northam, his fellow Exiles in Time.

THE END



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The Music of the Spheres

This is an impressive story of a heroic sacrifice made out in space. It will be found very absorbing and will hold the readers to the last word.

By STUART JAMES BYRNE

FOR eight, merciless hours the great space liner had been struggling. Long before, the huge old sun had claimed it as its own. Although the ship was more than sixteen hundred million miles from the red, fiery mass, its vibratory repulsion apparatus had proved itself insufficient. An exhausted crew of one hundred and fifteen dirty, perspiring men toiled constantly at the machinery. Their fatiguing labor was incessant, and every burnt out wire, every blown tube, and every warped plate was replaced. The great electric power wheel was constantly being turned by men stripped to the waist, whose grimy backs glistened in the flaring light of warning sparks emanating from the wires of the huge apparatus. Long since had their movements ceased to be likened to those of humans, but rather, to the movements of lifeless automatons, endlessly bending down and up, down and up, without change. Whole transformers were changed in a few seconds of time, and some of them were hooked up in dangerously powerful relays. The floor of this great room of chaos was strewn with all sorts of heavy, electrical cables, over which struggled many frantic workers stumbling with their heavy loads of extra equipment. Amidst all this, the deep, roaring hum of the mighty transformers became louder, and more menacing, while waving electrical fingers crept further down the non-conductive, insulator stands. A weird atmosphere

of horror began slowly to prevail, as outside the ship, so far away and yet so near, the great, red star of the void reached out its titanic, invisible arms, and their silent and terrible power seemed literally to drag that life-bearing mass of luckless metal into its towering flames.

WITH their faces pressed wearily, yet anxiously against the cold glass of the passenger's promenade, a once merry group of two thousand people strained their eyes downward upon the ruddy death. Beneath their feet the metal trembled with the struggling of the machinery. From two thousand souls issued continuously a single prayer—for deliverance. Above, below, and all about shone the unfamiliar stars, some twinkling, some glowing, like a miscellaneous powdering of large and tiny jewels sprinkled across a limitless expanse of blackest velvet;—yet far away, in vast, immeasurable depths. Each of these now humble souls felt frightfully alone as they looked at the stars of space, and they were oppressed by the manifestations of the colossal powers of nature. Like sheep in a strange wilderness, they drew instinctively closer together.

From the captain's quarters near by stepped a tall and care-worn man. His once spotless uniform of white, blue, and gold was soiled and wrinkled. His gray-ing hair hung down from under his crunched cap and dangled in his eyes. Silent people gathered about him,—a sea of white faces;—hope, weariness, both

expressed,—all tired and strained. He stood motionless amongst them, understanding their silent question. Hundreds of eyes watched the pale lips move as the expressionless words came forth.

"There is only one way," he said, slowly, "and only one."

No chorus of voices resulted,—that would have happened hours before. The pale faces merely leaned nearer, and eyes stared. An eternity of silence seemed to follow, while those same, pale lips twitched,—or perhaps they trembled. It was too slight a movement to be definite. This was the only change in the expression of that stern face as the low words were spoken.

"Someone," he said, "must be willing to sacrifice—his life."

This time there was a slight, rustling noise which emanated from the mass of figures. The two flashing eyes in the stern face moved slightly back and forth, penetrating each and every mind,—not blaming the silent ones,—but somehow,—hoping. Then a hand was raised, and a silent figure stepped forward. It was the figure of a pale-faced young man. The crowd moved aside. There was no shout of praise, no back-patting, no hand-shaking,—nothing, just eyes. Only one thing expressed the feelings of all towards this brave and generous boy. The tall figure from the captain's room placed an arm about his shoulders as the two disappeared from view in the mazes of the liner.

THE silvery sides of the ship stretched far away in space and vanished on a metal horizon, where blackness and myriads of twinkling stars commenced. Lines of rivet-heads, and of metal-covered port-holes ran up and down, all over, and into the distance. A heavy door, huge,—silent, slid upwards, revealing a black interior. Within nestled a one man flier. A grim

young man sat at the controls. Before him, through his front observation-port, he could see the square opening he was to pass through. It was a square of blinding light to him, for the great sun was directly in his path, like the maw of hell, opened to receive him. He was hunched tensely over his instruments, waiting for the signal;—the signal of the rockets, which would take his life. His life,—he dwelt yearningly, for a moment, on those words. Then came two greater words. Their lives,—yes, that was it, he thought,—that had to be it! He hadn't much time to think after that, for the signal came.

A great flash of yellow light flared up against the flames of red before him. There were the rockets! The time had come, he knew. No pausing now,—the thing could not be tried again. Now or never it would be! The young man's eyes quivered,—his lips were compressed. For a mere fraction of a second, he revolted from his controls and leaned back away from them. Yet, an inner self finally stirred him to press the starting knife-switch into place. As his head was jerked backwards by the tremendous starting force, his mouth was held rigidly agape, and his white teeth shone brightly in the clash of fiery lights about him. The meteor-dodging rockets of the liner flared far into space, striving, like an outstretched hand in a gesture of protection, to push itself up and away. From the ship's side hurtled the tiny flier, shooting backwards its orange flame with terrific force. Then an equal fire stream pierced the ether from its forward rockets, retarding the small vessel's forward motion. Thus, for a moment, it hung suspended in space, in relation to the mother vessel, while its great force-stream pushed mightily against that of the liner. With the great ship's vibratory repulsion apparatus working at its greatest capacity, its rock-

ets pushing powerfully downward, and with the help of the great force stream of the tiny flier by its side, the success of the experiment was soon to be realized. The great, trembling mass backed slowly away from the flier. Faster and faster it disappeared into the blazing jewel fields of Infinity,—free from the monster sun.

A TINY flier fell towards a great, red sun. Space was silent, and dark, but inside the flier a very lonely man pressed his pale cheek against the cold glass of the side observation port. His eyes were closed, and his mouth hung loosely agape. Great beads of perspiration stood out on his forehead. His chest rose and fell, accompanied by the sound of laborious gasps for air;—and painfully, futilely, his heart throbbed with ebbing life. As the air of the single compartment became more and more heavily laden with carbon dioxide, his whirling thoughts became proportionately disconnected.

He was wondering, dreaming, and praying, but didn't dare to hope. He wondered if the liner had successfully escaped. Of course it had, he thought,—the captain said it would. All the crew had stared at him he remembered,—more than the passengers had stared,—as he stepped into the little flier, and while the inner double doors were closing. Now he noticed the absence of all sound,—the intense silence about him. Why wasn't there any noise?—he thought. Then he wondered how far he had fallen, and if he would suffocate before he burned. He hoped so.

His thoughts became blank for many long minutes. Still the black craft dropped silently toward the terrific furnace, like a meteor; and a strange light, like the zodiacal light of another system he had known, began to glow all about, dimming the stars. Then his thoughts

returned,—slowly they passed through his mind.

Again it was the intense silence about him that he noticed. It seemed so heavy a silence as to have substance, and he could almost feel it pouring into, and permeating his wavering soul. There was something about it that almost drew him from his body and floated him in the great Infinity outside. As his thoughts crept more and more into the subconscious, he began to experience a new sensation. He was not sure, at first, but he thought he could hear faint strains of music. He wondered if this was the proof of the thory that such a sensation usually preceded entrance to the 'hereafter.' Gradually, the music became more definite. It was slow and smooth, and more beautiful than he had ever heard. Its outstanding quality was its exquisite harmony, so wondrous as to make him forget his own existence, and to suspend him in a plane where the silence was so perfect as to ring with music. He loved it. Of a sudden, the old words of a great poet were before him.

"Let me silent be,

For silence is the speech of love,
The *music of the spheres above.*"

Could it be, he thought, that he was actually listening to that great symphony of heaven's harmony, the music of the spheres? The great strains poured into his soul. He sank softly and peacefully away into restful oblivion.

Two thousand weary but thankful people pressed their faces against the cold glass of the passenger's promenade of the great space liner. Far away, in the twinkling void, shone a dull, red star. From two thousand weary souls arose two prayers. One was of thanks for deliverance. The other was one that asked for deliverance,—for the deliverance of one who was far away, out there,—alone.

The Golden Planetoid

By STANTON A. COBLENTZ

Our author has the faculty, in the most impressive of his stories, of bringing in a touch of sarcasm quite à la Dean Swift, and in this narrative, which in places seems absolutely tragic, he infuses a criticism, severe yet perhaps deserved, upon human nature. The reader must not overlook or miss the judgment which Mr. Coblentz places on some phases of the nature of mankind.

CHAPTER I

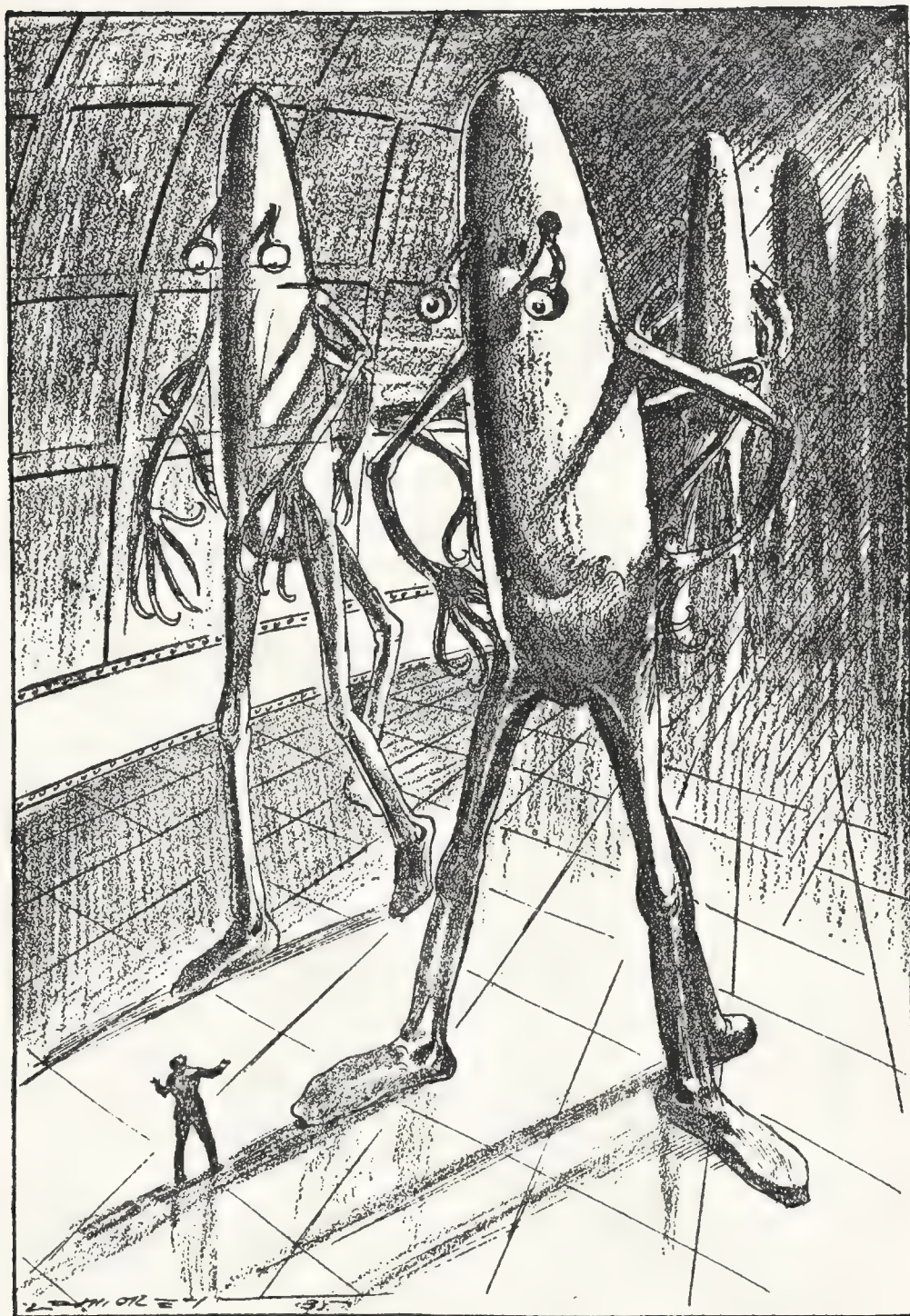
The Apparition in the Skies

THE GOLDEN PLANETOID" was the name we gave it—and for months it constituted the chief topic of conversation throughout the earth, a source of amazement, dread and fruitless speculation to scientists and laymen alike. It was on the nineteenth day of November, 1994, that it first swam into view, a dim twinkling dot in the constellation of Perseus; but before the New Year was ushered in, it had caused the wrinkles to deepen on more than one astronomical brow, and the first palpitations of alarm to tremble across a startled earth. That a new asteroid should have been discovered was of course no matter for surprise; many hundreds of these "minor planets," revolving between the orbits of Mars and Jupiter, had been discovered and charted long before our own day; but what distinguished the Golden Planetoid was that, from the beginning, it seemed to differ from any heavenly body ever previously known.

First of all, there was the problem of its color—a deep, brilliant golden which, while not absolutely unique, had a certain blazing intensity, a vividness of light indicative of some inner luminosity,

rather than of a mere sun-reflecting quality like that of all other planets. But this was the least remarkable thing about it. Far more disturbing was the question of its movements. Never before had such motions been detected through any telescope; the staffs of four great observatories, endeavoring to follow its aberrations and to determine its orbit, were reduced to a state of nervous exhaustion; the most renowned mathematicians confessed themselves befuddled, and at least one eminent astrophysicist was driven to suicide in his hopeless exasperation.

The fact is that the Golden Planetoid behaved as if mad. It seemed to ignore all the laws imposed from time immemorial upon self-respecting members of the Solar System; it moved neither at a regular speed, nor in a definite path; and at times, with a velocity that must have been prodigious, it darted through several degrees of arc in the course of a single evening; then, reversing its direction, it would move back as many degrees within the next twelve hours; then for a day or two it would hover apparently motionless, making no more impression on the astronomical camera than any of the fixed stars; then again it would begin to move, revolving in long circles and ellipses, until, from its original position in Perseus, it had



My human companions had all vanished—but what were those weird, shadow-like beings that hovered above me?

traveled almost halfway round the heavens to Aquila.

Such capriciousness was not only unexampled in astronomical history; it was in direct conflict with all recognized possibilities. Was it that the Golden Planetoid, by virtue of some rare chemical composition, was not subject to that gravitational pull which prevailed elsewhere in the universe? So scientists, in grave whispers, began to ask their associates; while the movements of the newcomer became stranger and stranger, and the guesses of observers grew wilder and wilder. How far, in those early days, we all were from the correct explanation!

It was not until the twenty-third of December that Dr. Russell McLinn, operating the 200-inch reflector at Whitney Observatory in Southern California, made the discovery which, when confirmed, was to send successive waves of terror around the world. The Golden Planetoid had suddenly ceased its aimless ramblings across the face of the cosmos; it had begun moving with arrow-like straightness in a particular direction; and its target was manifestly—the earth! With incalculable velocity, like a projectile shot out of a long-range gun, it came hurtling on and on, toward what seemed about to be an inevitable crash with our hapless globe.

Let it be recalled that we still had no way of determining either the distance or the mass of the stranger. Even through the most powerful telescope, it had not yet shown a recognizable disk; while, if it had any appreciable gravitational effect upon its neighbors in space, our instruments had not been able to detect the fact. Hence the most widely divergent theories prevailed. There were some who maintained that the Golden Planetoid was not a planetoid at all, but a blazing sun far out beyond the borders of the Solar System;

and only when finally it was seen to pass in front and across the disk of Jupiter was its comparative nearness established. Yet this discovery was not much of a comfort. We now realized that its collision with the earth could not be many weeks away. And even though it were a mere speck fifty or a hundred miles across, who knew what effect such a body, flying at twenty or thirty miles a second, might have upon our planet?

I shall not linger over those grim days of January, 1995, when the world waited in the mood of a man expecting to hear his own death sentence; when one heard it everywhere reported that the force of the approaching impact would sweep the earth's atmosphere with annihilating flames; when religious societies hysterically announced the "end of the world" and the coming of the "Day of Judgment"; when life was passed in a fever of praying, hoping, trembling, and agonized waiting. . . . Volumes have already been written on the horror of those weeks; it would be futile to repeat what is already so well known. . . .

More beautifully golden-hued than ever, the dread visitant from space still rushed upon us, while daily waxing clearer and brighter. At the same time—and here its mysterious nature was more in evidence than ever—it began to take on definite outlines in the Whitney reflector, though not those of the usual disk of a planet: rather, an extended oblong like the bag of a Zeppelin!

Never before in astronomical history had such an object been sighted! It is therefore all the more surprising that its real nature was not immediately divined. But astronomers, content with the theory that it was the misshapen fragment of some exploded world, were blinded to the facts by their zeal to compute the exact time of the stranger's arrival. We had not long to wait! At 12.30 A.M.

on the fifteenth of February, the Golden Planetoid would come to a fiery doom somewhere in the desert of Southwestern Utah, not far from the Arizona-New Mexico borderline.

By this time, of course, its exact size, speed and distance—although not its mass—had been computed, thanks to that new invention known as the Winsong spectro-telescope. Contrary to previous expectations, the intruder was found to measure but twenty-nine miles from end to end! Yet this insignificant particle—a mere speck among the worlds—glowed so dazzlingly with its own inner light, that, when still several million miles away, it had become visible to the naked eye! Either it was composed of radio-active substances, or was heated to an intensity scarcely credible in so small a body! In either case, the cataclysm of its arrival was an event few men cared to contemplate. . . .

History records that no migration has ever been more sudden, insensate and disastrous than the flight of the inhabitants of the southwestern United States. From the Texas seaboard to the coast of southern California, and from Ogden to points below the Mexican borderline, the people fled in their millions like rats from a burning ship. The deck of every outbound steamer was black with refugees; every outgoing railroad train—freight and passenger alike—was jammed to the doors with terror-stricken fugitives, many of whom carried all their earthly goods in small bundles slung at their sides; the air swarmed with departing planes, the roads were cluttered with an unprecedented motor traffic, and those who could not find a conveyance jogged wearily along the highways, in the hope of winning a place in some already overcrowded bus, truck or farm vehicle. It was said that, by evening on the fourteenth of February, an area of more than six hundred thousand square

miles had been repopulated. Only the cows, who went on placidly chewing, and some incredulous tribes of Indians, who took no faith in "white man's magic," remained unperturbed in that whole vast territory.

And then it was that the Golden Planetoid, as if endowed with a sardonic sense of humor, decided on another change in its plans.

CHAPTER II

The Descent of the Planetoid

SCIENTISTS have always been unanimous in maintaining that their calculations were accurate, and that had the Golden Planetoid continued on its course according to known gravitational laws, it would have smashed into the Utah desert at the indicated time and place—and the great migration of '65, accordingly, would not have become known as the 'Great Fiasco.'

But who could have foreseen the events of the never-to-be-forgotten evening of February 14? Who could have predicted that, having approached to within a hundred thousand miles, the erratic stranger would hesitate as if uncertain whether or not to reach the earth after all? It was at precisely 11.55 on the night of the fourteenth—only thirty-five minutes before the contemplated shock of the collision!—that Matthew Leeds, Director of Harmon Observatory, made an announcement that caused his assistants to gape incredulously, like men asked to believe in ghosts, witches, or the Nether World.

"Gentlemen, this beats the devil!" he suddenly cried, turning from his examination of a recently developed plate. "It looks like some fiendish cosmic joke! The Golden Planetoid has ceased to move!"

"What! Ceased to move?" gasped the

others. "It can't be! Why, that's impossible!"

"So I should say!" returned Leeds, crisply. "But just look at this plate!"

Hastily he thrust the object forward, and the men, with low exclamations of surprise, crowded about to examine it. The Golden Planetoid no longer made a streak across the stars, as a moving body must have done; its minute oblong form was plainly outlined against the background of the Milky Way!

So astonished were the witnesses that they were unable to speak. They merely stared at one another, dumbfounded, and still but half willing to accept the facts. The new discovery—if valid—constituted a refutation of all known physical laws! . . .

Fifteen minutes later the news had flashed across the length and breadth of the globe. The Golden Planetoid, as if bent on being contrary, had halted at the very moment when the earth's gravitational pull should have been most powerful! And now, its movements synchronizing with those of the earth, it hovered a hundred thousand miles above us!

But this was not all! Simultaneously, even stranger tidings came from the watchers at the 250-inch reflector at Carlton University. It was reported that a series of glaring green points had been detected along the golden sides of the Planetoid; and that, from these centers, searchlight shafts of emerald radiance shot far out into space, moving back and forth in slow, gradually widening circles, most of which had the earth as their target.

While frantic millions were distractedly trying to interpret this information, the wires and radios of the earth conveyed fresh news. The Golden Planetoid was again sinking earthward! But it was dropping with almost leisurely slowness, at a rate of but two or three

thousand miles an hour; while once more it displayed that same irregularity of movement which had bewildered astronomers months before. In such a totally incomprehensible manner did it swerve and waver from right to left; so capriciously did it loop back and forth, circling and spiralling like a great bird in search of prey, that a suspicion long growing in the minds of observers now gathered irresistible force: the Golden Planetoid was moving under intelligent guidance!

But if this were true, was the force that ruled it beneficent or malevolent?

Such was the question that tantalized the waiting millions when, on the following day, the Planetoid eluded observation behind heavy veils of cloud. But when the evening of the fifteenth day arrived, it was once more visible—all too visible!—a blazing shaft of light, whose golden brilliance shamed even the stars of the first magnitude, casting an eerie yellow tinge across the entire heavens. Still pursuing its erratic movements, it was no more than ten thousand miles aloft! Within a few hours, at its present rate of descent, it should enter the stratosphere!

It was at this point that it was again lost to sight behind a heavy blanket of clouds; indeed, there is reason to suppose that the cloud was in reality a smoke-screen which it spun about itself, since it was hidden equally from observers in Europe, America and Africa. Was it to disappear entirely? "Let us hope so! Ah, let us hope so!" many persons fervently cried, as the hours wore away, and the terrorized fifteenth gave place to the sixteenth, and throughout the earth sleepless multitudes vainly speculated, waited and prayed. But there were few who could have anticipated the events of the historic morning of the sixteenth.

It was shortly after nine o'clock

(Central European Time) when an alarming announcement was flashed over the earth from the radio stations of Soviet Russia. An hour before dawn, a blazing, golden apparition had been observed to break through the clouds above the frozen steppes, about five hundred miles north of Odessa. Of gigantic dimensions—close to thirty miles in length, and five or six miles in thickness—this celestial visitant shone so brightly that night was transformed into day; while so dazzling were its rays that many who gazed upon them were almost stricken with blindness. The natives of the small town of Smolensk, near which it first appeared, were overtaken with such terror that many were driven mad, and those, who did not perish of fright, rushed from their homes in a desperate stampede across the snowy waste. As for the peasants of the countryside—their fate was unknown; to this day, many remain unaccounted for. All that we were told in that first frantic dispatch was that the monster, slowly settling to earth while green searchlights played from its golden sides, emitted some withering beam which burnt and shrivelled all who came into contact with it . . . so that scores lay dead from that invisible radiation. There was, moreover, an intense emission of heat—so great that the deep accumulated snows had thawed, before the Planetoid settled to earth; while flood-waters were racing in streams frozen solid a few hours before.

The actual arrival of the Planetoid—as a later dispatch made plain—had been accomplished almost without a shock. The object slowed down in its descent as gradually as a railroad train entering a station; and, upon striking the earth, the whole great mass gave one convulsive shudder, and then became stationary as a mountain.

In at least one other respect, its re-

semblance to a mountain was complete. Rising above the level plain to the height of Mt. Everest, it was visible for scores of miles, a long glaring mass of an unearthly beauty as frightening as it was enticing. And day and night it shone with that same golden light, often varied with shifting green coruscations.

What wild, exciting days had now fallen upon the earth! The arrival of the Planetoid had in no way solved the mystery; in fact, we were more mystified than ever. And this was all the more true since, for a while, wireless communications with Russia ceased. It seemed that the Planetoid had produced some electrical disturbance in the atmosphere; storms of unprecedented violence, accompanied by lightnings and thunders and magnificent auroras, occurred in the region of its descent; the radios attuned throughout the world caught no more than the crash and rattle of static, while the fugitives straggling in by airplane from the stricken district could tell only broken, incoherent tales.

But amid all our apprehension and uncertainty, one fact was generally acknowledged. The Golden Planetoid had not only been guided here by some intelligent force; it was itself the abode of an intelligent force! Beings of prodigious and inconceivable powers perhaps inhabited its lighted recesses; beings who might at any time burst forth, overwhelming our planet with the bolts of some energy brewed among the stars. Against such assailants, of what avail would be all our guns, our poison gas, our high explosives? No one could say when or where the attack would be launched, or whether the aggressors would even be visible!

Hence the whole earth, shuddering with anticipation, became like a beleaguered city, which waits but half armed, not knowing from what direction the enemy will attempt an incursion.

But days went by, and lengthened into weeks; communication with Russia was resumed; the Golden Planetoid was reported to be shining unchanged amid the frozen steppes; and if it contained malevolent forces, they still bided their time. . . .

Then it was that a call went forth for volunteers—volunteers for the most daring adventure ever offered to man. Who would approach the Golden Planetoid, and challenge its secret? Who would go forward to that glaring mountainous mass, risking death in ways unknown and appalling? The explorer of polar wastes, of tropical jungles, of the depths of the sea or the heights of the air; the warrior who offers his life-blood, the battler with storm, flood, or fire—these may all be brave beyond praise, yet even greater courage was required for him who would investigate that blazing mass from the far reaches of space.

Nevertheless, young manhood was ready; by the thousands the volunteers offered themselves from every civilized land—and by the thousands they went to their doom to their certain destruction.

Yes, to their doom!—to a doom which, before long, began to appear inescapable!

At first a majority, on approaching within miles of the Planetoid, were blinded by its brilliance, which proved unendurable to the naked eye; and later, when a dark greenish glass had been devised to protect the optic nerve, invisible emanations from the Planetoid checked the advance of all aspirants, penetrating the clothes to produce painful sores and blisters which, in most cases, turned out to be fatal.

Were the occupants of the Planetoid deliberately rebuffing us?

I shall not enter into all the heroic

but disastrous experiments: how men went forth encased in steel, like the knights of the Middle Ages; how they rode forward in heavy war "tanks" or armored cars; how they endeavored to protect themselves beneath layers of wood, cotton and other resisting materials, but found that the rays pierced everything—and always with the same tragic result! So discouraging were all the attempts that, after six weeks, we had virtually given up hope of approaching the Planetoid—and the governments of most of the nations had issued edicts forbidding their citizens to throw their lives away on such a useless project.

Apparently only one course remained. And that was to draw near the stranger by the slowest and most tedious method known—the method of excavation. It was I, Chester Wilde, an American engineer in the employ of the Soviet Government, who originally made the suggestion; and it was I who, after weeks of negotiation, was given command of a crew of workers and an unlimited supply of mining equipment, with instructions to burrow a horizontal shaft at a depth of from ten to twenty feet. Starting at a point about five miles from the Planetoid—a point shielded from the murderous rays by a slight but propitious rise in the land—I was to work underground at the utmost speed, and, having dug to a point directly under the Planetoid, was to bore upward in the hope of piercing it from beneath.

Almost gaily, like one who goes to some gala party, I accepted this commission.

Yet well I knew that my chosen path was likely to prove disastrous if not suicidal; and in the background of my mind was already a premonition of the unexampled adventure that lay ahead but only too near.

CHAPTER III

I Investigate the Mystery

IT may be true that great events have great beginnings; yet nothing could have been more commonplace than the commencement of my assault upon the Planetoid. For many weeks—in fact, for a full six months—all was as dull and unexciting as the sinking of a new shaft in a coal mine. Equipped with the latest and most efficient machinery, we made rapid progress; yard after yard, mile after mile, we drove our way through the darkness beneath the earth, constructing a horizontal gallery little more than six feet across, in whose poorly ventilated, electrically lighted gloom we often forgot the fascinating goal of our efforts.

Approaching the Planetoid, we slanted the shaft down to a depth of about fifty feet, in order to avoid the dangerous emanations which, we feared, might pierce the earth for many yards. And then, proceeding with the caution based on our well grounded apprehensions, we dug our way forward by inches. A month was occupied in covering the last lap, from a point several hundred yards west of the Planetoid, to a position directly beneath it; then, having observed no new reason for alarm, we set forth on the most hazardous part of the undertaking: to send the tunnel up at a steep incline, so that it would strike and penetrate the floor of the Planetoid.

The peril here was only too evident. Was it not likely that the bottom of the Planetoid was composed of the same glaring substance as the sides, and that the same intolerable rays would shoot forth, to blind or kill the intruder? But, on the other hand, was there not a possibility that the intervening layers of earth would dull the power of the rays, so that one might approach without danger? It was on

the latter possibility that I was relying; but I must confess that my certainty was not so great as to spare me many an involuntary shudder as I realized that the cavern which I was excavating might turn out to be my tomb.

Nor were my misgivings relieved when, drawing within ten or fifteen yards of the estimated position of the Planetoid, our instruments collided now and then with small glaring orange-yellow, metallic masses, which glowed, as if with their own inherent fires, and produced painful sores when handled. That these particles were radio-active seemed self-evident, but their radio-activity was manifestly of a type never observed before. More than likely, they were of the same substance as the walls of the Planetoid!

My curiosity being whetted by these finds, I urged the workers to make haste; and such was my eagerness that I did not take warning from an increasing heat, which penetrated our tunnel from above, so that we were forced to throw off our upper garments and sweltered in a tropical temperature. "On! On! On!" I encouraged, losing sight of caution entirely; and as the drilling machinery pushed its way upward through the yielding soil, I had the triumphant feeling that only a few short yards of earth prevented me from poking my head into what was, in effect, the depths of another planet. "On! On! On!" I repeated, growing each moment more excited. "On! On!"

My words were never finished. What happened at that instant has never been quite clear in my mind; indeed, it all occurred so suddenly that I was as a man dazed by a thunderbolt. Presumably the roof above us, insufficiently timbered, had all at once given away; at all events, there was a deafening roar of falling rocks and earth; a flash of blinding light was in my eyes; I heard

the shouts and screams of the men behind me; there was a thudding concussion against my head; and reeling and groping, I staggered to earth, where I lay full-length with the sensation that something heavy was pressing down upon my chest . . .

At this point, I lost consciousness—for how long, I cannot say. But when once more I became aware of myself, all things had changed. I was still lying at full length, perspiring in an equatorial heat, but was no longer aware of the weight upon my chest; nor did my ears now catch the confused sounds of movement, alarm and agitation. Yet never have I been more bewildered than at this moment! Was I asleep, and dreaming? If so, no nightmare was ever so strange, so vivid, so unearthly!

I was lying on a smooth, hard, glistening surface, gazing up toward an immense far-off vaulted ceiling, which, of an eerie sea-green complexion, was glowing with a faint incandescence. A network of delicately branching beams and girders, all woven artistically together and all of the same weird sea-green color, supported the gigantic fabric of the roof, which, it seemed to me, must be miles above; while the atmosphere, which gave the effect of being heavy with green vapors, had a peculiar sweetish aroma I had never encountered before; a scent a little like that of a garden drowsy with the summer bloom, and yet invigorating as a fresh, ocean breeze.

Within a few minutes, thanks to this peculiarly refreshing quality of the air, I had recovered sufficiently to recognize where I was. With a shock of terror and of triumph, it came to me that I had entered the Planetoid!

As this recognition flashed over me, I sprang to my feet as if stung by a serpent. And, as I did so, I made another discovery. I was not alone. My

human companions had all vanished—but what were those weird, shadow-like beings that hovered above me? Were they mere freaks of my disordered imagination? No! for as I gazed at them in consternation, I could clearly distinguish their shifting outlines! Inconceivably tall—taller than a five-story building!—they were only remotely human in shape; they walked upright on three legs, of which one, placed behind, seemed to have little function other than to balance their huge forms; and four long limbs, each ending in a dozen long tentacle-like fingers, served in the place of arms. More surprising yet, however, were their heads, which seemed a mere extension of their chests, from which they were separated by not even the hint of shoulders or necks; while several curious bulbs and knobs, reaching out of their heads and glowing with a faint violet light, seemed to serve the function of eyes.

But the strangest, the most disquieting, the most utterly uncanny thing about these giants was not their size, nor their grotesque features, nor even the unaccountable silence with which they moved; it was the fact that, seen at certain angles, their bodies were transparent! Was it that they were composed of some watery or gaseous substance? As if possessed of X-ray eyes, I could see straight through the nearest of the group; could see the shadowy outlines of his bones and viscera, dimly glimpsed as with a fluoroscope!

For a long, terror-stricken moment I stood, staring up at them, with the appalled sense that I was trapped. Panicky thoughts of flight filled my mind—thoughts as irrational as they were arrow-swift—for how could I, a mere mite, hope to escape these giants crowded about me by the score?

During that slow, protracted moment of torment, while they loomed on all

sides as if scrutinizing me curiously, the violet light on their head-knobs deepened into purple flashes, then changed to pink and vermillion and back again to violet. Meantime I was aware of a strange pulsation in the air, as of electric motors vibrating, and was startled by searchlight streamers of coppery light, which played about the roof thousands of feet above us. . . . And all the while the silence continued, strange, frightening, almost sepulchral.

Then all at once, with a sudden lunging movement, swifter than my eyes could follow, one of the long tentacle-like arms of the monsters reached down toward me; with bewildering speed, I was scooped up from the floor, to find myself dangling forty feet above ground! Imagine my terror! Like a sparrow snatched up in an eagle's talons, I found myself, utterly helpless, in the grip of one of the Titans, who paid no more heed to my struggles than a cat pays to the writhings of a mouse.

Meanwhile instinctively I screamed, and screamed again and again, until my lungs were sore. But my captor did not even seem to hear. Slowly he turned me over in his long tendril-like fingers, as an entomologist might turn over some rare beetle for inspection; and in the air all about me I was aware of a wilderness of waving tentacle-arms, wriggling toward me like the arms of gigantic octopuses. Could I have wrested myself free, I should have let myself fall to death, rather than face that horrible inhuman multitude. But I was clutched too tightly for escape.

At the same time, I became aware of severe pains in my arms, due to the cramping pressure with which I was held. Yet, strange to say, the instant I felt the pain, the pressure was eased, and the discomfort began to abate. . . .

Now ensued a scarcely less tormenting interval, when I was passed from

hand to hand—or, rather, from tentacle to tentacle—like some rare exhibit for a museum. I do not know how many of the beings handled me—perhaps not more than twenty in all, though it seemed like a hundred; I was bruised not a little by the contact, and in one case my shoulders were seized so violently as to be nearly dislocated. Apparently my captors were finding me a singular specimen! They seemed interested in every part of my anatomy, somewhat as we might be interested in the part of some unique reptile; they felt annoyingly at my ears, nose and chin, as if trying to discover their purpose; and what particularly piqued their curiosity was my red hair and full, reddish beard, which they never tired of examining and pulling, as though here were some rare biological phenomenon.

Yet, during the entire inspection, the creatures remained without a sound. Had they any means of communicating with one another? If so, it was not through any speech audible to my ears.

But that they did communicate seemed evident enough when, after inspecting my hair and other points of interest, they stood together face to face for twenty minutes or half an hour, much like a party of men conferring; while their head-knobs flashed and sparkled energetically, and still not a sound issued from any of them.

Meanwhile, held securely thirty or forty feet above ground, I was only too well aware that my fate was being decided! Squirming and writhing futilely, I had the feeling of a lamb being prepared for the slaughter. . . .

At length, as if at a given signal—though I had heard no signal—all the beings began moving away in a triangular formation, reminding me of a flock of birds in flight. They glided, it seemed to me, with the speed of an ex-

press train; and yet, as their great limbs flashed across the ground, their movements appeared effortless, and the only noise they made was a faint shuffling.

During the next few minutes, I must have been carried not less than twelve or fifteen miles; while, despite the dread which I still felt, my eyes caught dazzled glimpses of my surroundings. Considering my rapid movement and the confused state of my mind, I cannot say that I noted anything very distinctly; yet I did have an impression of a world of vast and intricate machinery; of huge buzzing machines made of a silvery glaring metal, and reminding me of electric dynamos; of wheels like gigantic electric fans, which rotated with incalculable rapidity; of bulbs of brownish glass, which would have seemed to be radio tubes, had they not been eight or ten feet high; of telescope-like projections which shot up at odd intervals from the floor; and of enormous lamps and mirrors, arranged in groups, which cast reflections too bright for my eyes. And over all, as at the moment of my arrival, was still that weird sea-green coloration which made me feel as if I were moving not so much through reality as through a dream.

CHAPTER IV

Magru

REACHING a point at one end of the Planetoid, where the concave sea-green wall curved to a stupendous height, my captors were met by fifty or a hundred of their fellows, all of the same gigantic build, with the three legs, the four arms, the neckless heads with projecting knobs, and the shadowy, semi-transparent bodies that gave them something of a ghostly appearance.

The members of the new group, as if delighted at our arrival, lost no time

in seizing me and passing me from one to another for examination, once more with particular attention to my red hair and beard. When they had completed this inspection, one of them lifted me to a metallic platform or table fifty feet above floor-level; and while I glanced in fright into the abyss, another of the giants dextrously took hold of me, and, before I was quite aware what he was about, had twisted strands of wire about my limbs, so that I lay helpless as a lassoed steer, squirming and tossing to the poor best of my ability.

Worse still! While I lay there on the platform, staring at my persecutors in straining horror, I caught the glint of huge steely blades, hideously flashing and sparkling in the eerie, greenish light. With swift movements these blades drew near; and, while I cried out in terror that no one seemed to heed, the ghastly explanation burst over me. My captors, curious as to my construction, were not to content themselves with an external examination! Like small boys inspecting a watch, they were determined to tear me to pieces in order to find out what was inside!

Faced with that horror of vivisection, I was near to swooning. A low groan forced itself from my throat as one of the knives, long and thin and curved like a scimitar, clove the air at arm's length above me; but still no one seemed to take note of my terror. Oh, why had I committed the unspeakable folly of exploring the Planetoid? Why had I not gone safely about my own business, content with the open air and the sunshine and the comradeship of my fellows? Now my doom was unavoidable, and there would be no gain even to science! . . . With a furious regret, in that last appalling instant, I thought of a certain blue-eyed smiling face, and passionately longed to be with its pos-

essor, and realized that she would never even guess my fate. . . . Desperately, like a drowning man reviewing in a flash the events of a lifetime, I saw my home, thousands of miles away among the green hillocks of Iowa, and craved to enter it again, and to greet the dear familiar ones within . . . when all at once the tentacle-hand of one of the giants swept down upon me, a blinding mass of some sponge-like material was thrust against my face, I had a gasping sensation as some noxious-smelling vapor invaded my lungs, and instantly my senses reeled, and blankness, nothingness, fell across the world.

* * *

WHEN I regained consciousness, it was with the stunned sensation of one who has met with some accident . . . and has been asleep for a long while. Somewhat surprised to find myself reviving at all, I opened my eyes and discovered that the scene had not altered. Above me a crowd of the spectral-looking giants still loomed, their long, many-fingered arms still bending and waving through the air; while I still lay on the platform, my limbs bound by cramping wires; and in my nostrils lingered just a trace of the poisonous-smelling fumes.

But not at first was I to recognize the extraordinary change that had overtaken me!

As the sensation of stupor gradually departed, I became aware of an acute pain in the back of my head—a pain as if I had been slashed by a dagger. So intensely was I suffering that I scarcely felt relieved even when one of my captors clipped away the restraining wires and I was able to stagger back to my feet. Surely, I had been spared for the moment only so that I might endure some new devilry!

Instinctively, when my arms were

freed, I had reached toward the sore spot—and what a surprise I received! It was as if this were not the top of my own head which my fingers explored! It was as if part of somebody else's body had been grafted on to mine! First my fingers came into contact with some cords and wires tightly woven together toward the base of my hair; then I discovered a spot where, to my indignation, the hair had been cut away; then—strangest of all—my fingers encountered a knob, a hard bony knob about the size of a large boil, which had never been there before! What liberties had the strangers been taking with my head?

Not for long was I to remain in doubt. Even as I asked myself this question, one of the giants reached down, and another sponge-like contrivance was pressed against my nostrils. And instantly I felt a remarkable change. It was not merely that an exquisite odor penetrated my nostrils, an odor of the sweetness of honeysuckle and yet exhilarating as the breath of a pine forest; it was not merely that the pain in my head was soothed, and that an immediate sense of well-being overcame me; it was that I seemed to hear a sudden peculiar buzzing as of electrical batteries, that a new door in my consciousness all at once seemed to slide open, and that a host of powerful, inconceivably strange perceptions came flooding over me in a dazing, overwhelming torrent.

How convey an idea of what I experienced? Shall I say that it was as if I had discovered a new continent of thought and sensation? Shall I say that it was as if I had been blind all my life, and suddenly was aware of light and color? Shall I say that I had grown sensitive to new impressions, to new invisible harmonies of the ether, to electrical pulsations beyond the range of

any instrument? Shall I say, in fact, that I had been endowed with a sixth sense?

Incredible as it may seem, this is literally what had occurred. Yet I fear that I shall never be able to impart to the rest of the world, with its mere five senses, the realization of what I perceived.

The simple fact, however, is easy enough to comprehend. It was as if my mind contained a radio-receiver; and as if that receiver were able to tune in on the wave-lengths of other minds. All at once, thanks to a new organ with which I had been endowed, the psychology of my captors became clear as an open book; I was able to realize what they thought, what they felt, what they intended and desired! By a wordless language that dealt in images and ideas but never in sounds or written symbols, I communicated with them and came to know them as I had never known mankind. Not a thought or a wish of theirs could be concealed from me, any more than a thought or a wish of mine could be hidden from them; I found myself engaged in long silent colloquies, in which a thousand mysteries were all at once made plain.

So startling, so overpoweringly strange was the turn of events, so numerous and so amazing were my new discoveries, that I find it difficult to start at the beginning, and to make the simpler explanation first. But let me not forget to explain about my new sense-organ.

The principle behind it, as I could see at a glance, was nothing more complex than that which enables certain insects to perceive their mates from afar; nothing more complex than that which equips us to hear speeches and symphonies over the width of a continent. The generation of each thought and feeling, it was now clear to me, was accompanied by an electrical process,

and by resultant waves and vibrations which pulsate through space, although too faint and feeble for common detection. But, given another electrical apparatus sensitively attuned (as a radio receiver may be attuned to particular wave-lengths), and the waves and vibrations may register themselves and be translated back into the original feelings and thoughts. Such an electrical apparatus was represented by the new sense organ grafted to my head; consequently, I could not help knowing all that passed in the minds of my captors.

Naturally, as soon as I was aware of my new powers, I desired to learn who my gigantic hosts might be, and where they came from, and how and why they had visited the earth . . . Let me report the conversation that ensued between myself and Magru, the most imposing-looking of the strangers, and their leader.

Although, as already indicated, our intercourse was by a transference of ideas rather than of words, I shall of course have to translate the dialogue into English—which means that, owing to the natural cumbrousness of speech, I shall be able to give no idea of the lightning rapidity of our interchange.

"My friends and I," began Magru, "belong to one of the oldest and most highly evolved races that inhabit the four corners of the universe. We are really your next-door neighbors in space, for our home, the planet Umgu which revolves about the white sun Alvov, is located at a distance of no more than thirty-four light-years. Our people have long been accustomed to cruising through the Milky Way, having explored for many hundreds of light-years in all directions; only the insignificant size of your planet and its uninteresting appearance have caused us to overlook it so long. We invariably make our journeys in little cars like this Plane-

toid, which are propelled and guided by the power released by atomic disintegration. The walls of our car, as you see, are of a radioactive metal, which serves to light our way through space and gives the Planetoid its beautiful golden coloration; while the greenish searchlights are operated by the opening of windows in our metallic walls, permitting the green illumination from within to pour out into space in any direction that the manipulation of the light-valves may decide."

"If you travel so far," I inquired, by means of a hasty thought, "each flight must occupy you for many years?"

"Oh, yes, why not? Since we left home, your little planet has already whirled a thousand times about its central sun."

"A thousand times?" I echoed in bewilderment. "A thousand years! Tell me, can you be immortal?"

"Nothing in the universe is immortal, except the universe itself! However, we are not mere ephemerae, like yourselves. A million of your years would constitute an average lifetime for us. You see, we are not subject to the laws of growth and decay that rule the lower orders of creation. We do not feast on gross material particles, like the members of the animal kingdom; our energy is maintained by means of charges of electricity, which we pass into our bodies directly from the dynamos which you see scattered about here. Thus our tissues are saved from degeneration, and we may keep fit for ages."

For a moment my admiration for these superior creatures almost overpowered me. "But why should beings of your prodigious capabilities waste time or energy on a minor planet like the earth?" it occurred to me to ask.

The violet head-knob of my companion flickered a little, then brightened as he replied:

"The fact is, my friend, we did hesitate a good deal before coming. That was why your astronomers observed us wavering back and forth in space. However, nothing in the universe is so insignificant it deserves to be scorned. Upon our return, we propose to deliver a report on 'Midget worlds and their inhabitants.'"

"But what, after all, do you know about the inhabitants of this world?" I objected. "Why, you have never left your own Planetoid!"

Magru's head-knob flickered once more, and I felt an emotion of astonishment surging over him.

"But we know everything about you!" he asserted. "All we have to do is to anchor here; and by means of our acute senses—of which the thought-perceiving organ is by no means the keenest—we are able to detect the electrical waves shooting across the planet's atmosphere from the various inhabitants, and can interpret these to discover what is going on. Thus we already know about your two-footed race, with its insanity of feuds and wars. We are disgusted, I assure you, and would gladly escape at once from such a bestial environment—if it were not for a little accident that befell on our arrival."

"Little accident?"

"Yes, we miscalculated the speed of our descent, and shattered the bottom of the Planetoid against some rocks. This fracture we have ever since been engaged in repairing, but will not have the work finished for weeks yet. It was through the broken segment that you entered."

"Even so, I don't see why you have never gone out on to the earth," I persisted. "Surely, there would be much of interest to see."

"Oh, we have seen much more interesting worlds! Besides, why take the chance? A foreign atmosphere is apt

to give us lung trouble. That is why we prefer to have you as intermediary."

"Me? As intermediary?"

A silence followed, during which my thoughts turned abruptly back to my own predicament. What did my captors intend to do with me? How long would I be kept a prisoner in the weird depths of the Planetoid?

Instantly Magru read my thought. "Give careful heed, my friend!" he ordered. "There is a mission which you can accomplish for us. We should advise you to acquiesce—yes, we should advise you to acquiesce at once, if ever you would see your own people again!"

As he spoke, a crimson flash of electricity shot the length of his body, with low rumblings like a bolt of warning.

So startled was I by this phenomenon, so confused were my thoughts by sudden terror, that for the moment I could not read Magru's clear meaning. While my heart turned to lead within me, the sensation again overwhelmed me that I had been saved only in order to serve some diabolical purpose of my captors.

CHAPTER V

An Outlaw from Humanity

"**I**T was not merely for our own amusement," stated Magru, severely, "that we allowed you to invade our dwelling. Never think we were not apprised of your approach and could not have checked it—had we not preferred to break down the earth above your tunnel and make you a captive. It was not for our own amusement, either, that we performed a delicate operation, equipping you with the thought-perceiving sense. Now cannot you perceive our purpose?"

Speechlessly I gazed up at Magru. Never before had this great being, with his semi-transparent X-ray body looming above me in the weird green light,

seemed quite so formidable, quite so huge or unearthly. Yet, even as I stared at him, his meaning became plain.

"When we left the planet Umgu," his thought may be translated, "we were commissioned to collect some representative fauna of the minor planets. You, of course, would do as a bizarre specimen; but one example would not suffice to satisfy the curiosity of our zoologists. Therefore we offer you your liberty—on one condition. Within a year, you must return with not less than five of your fellow beings, who of their own will agree to travel with us back to Umgu. You may assure them of good treatment. The return voyage will be swift—lasting not more than a century or two, at most."

"A century or two! But we would all be dead before that time!"

"Not at all! We have a preserving fluid which would revitalize you for a score of centuries. What do you decide, my friend?"

Under the circumstances, what could I decide? In my eagerness to escape Magru and his kind, I would have promised to rearrange the very orbit of the earth!

Yet, even as I assented, the furtive thought crossed my mind, "What if I don't come back after all? What if, once being free, I forget all about the agreement?"

But alas! my captor's fatal power of thought-reading had betrayed me!

"Do not imagine you can evade the contract!" the angry warning of Magru flashed at me, accompanied by another burst of lightning and rumble of thunder. "We shall catch your thought-rays wherever you are; and, wherever you are, one of our number shall emerge from the Planetoid, and, risking the unhealthy fumes of the earth's atmosphere, shall find you and stamp you out of existence!"

The fury of emotion with which this warning came to me was evidence enough that it was more than an empty threat. From that moment forth, the idea of disloyalty to Magru never again occurred to me.

"But if you are a faithful servitor," the giant continued, more mildly now, since he knew that all the thoughts of revolt had been crushed, "we shall grant you any reward within our power. Think hard! For there is much that we may bestow. Perhaps you would like a seventh sense, giving the power of detecting objects at a distance. For the present, as a sign of our good will, you may keep your sixth sense!"

I acknowledged this favor gratefully; while Magru, lifting me into one of his octopus-like hands, began to carry me away toward the tunnel-entrance.

"One reminder more!" he added. "When you return, in a year or less, feel no alarm should you not find the Planetoid here; you will then know that we have repaired the damage and are taking a short tour of exploration to some adjacent orb. Just wait for us here! Within another few months, at most, we shall have descended again at this spot."

A few minutes later, Magru had set me down at the tunnel-end, and I was groping my way back through the darkness toward the entrance and my fellow men.

* * *

MY arrival created a sensation; for the workers in the tunnel, having scrambled back to safety after the disaster, had reported me as killed in the cave-in; and this view had seemed the only acceptable one, although all attempts to recover my body from the ruins had thus far failed. Hence, on making my way back to civilization, I was regarded somewhat in the light of

a dead man resuscitated returning to life.

And, like a dead man returning, I was beset with unforeseen difficulties from the moment of my reappearance.

As I made my way from the tunnel entrance, and the workmen and my fellow engineers crowded about me, shouting and clamoring and congratulating me on my escape, I found myself not behaving as might have been expected. That accursed sixth sense! From the very first moment, it began to get me into trouble! Except for this superfluous organ, I should have acted like any other man under the circumstances: I should have heartily returned the greetings of my fellows, shaking their hands, clapping them on the backs, joining in their enthusiastic expression of rejoicing at our reunion. But the sixth sense, unfortunately, made all that impossible.

For what did it show me? A multitude of facts, otherwise unsuspected, stabbed my mind in a swift burst of light—facts vivid, disillusioning and chilling! Here, for example, was Harry Frank, one of my old pals, who had always been high in my esteem. By means of the thought-perceiver, I saw that he had been hoping to replace me in my engineering post, and hence viewed my return with less pleasure than he professed. And at this knowledge I became so angry that I turned my back and pretended not to see him. . . . Then there was Roger Hubert, whom I had always looked upon as a "good friend." I saw now that he had been secretly envious of me, and had even felt a sly satisfaction at my disappearance. And so, in my indignation, I ignored his out-thrust hand. . . . Again, there was Pete Anderson, who had always fawned upon me with sugary words of praise. I could now see into the foul abyss of his hypocrisy, and felt justified in staring at him icily when he rushed forward to greet me. . . . On the other hand, there

was Jim McCord, one of the common laborers, to whom I had never paid more than a passing attention. It was now evident that, from the depths of his warm heart, he was delighted at my return. Hence I grasped his hand like that of an old chum.

Meanwhile the other observers stood about, staring at me strangely, as if unable to imagine what had come over me. . . . I believe it was Andy Wilcox who finally hit upon the explanation. Noticing the bulge in the back of my head, where the sixth sense had been grafted, he cried out in astonishment:

"By the devil, look at that swelling! He certainly got a peach of a knock in the cave-in!"

"All his hair is gone on the back!" put in another. "Wonder it didn't kill him!"

"Better put a cold compress on it!" was the advice of a third. "That'll bring it down quick enough!"

"It doesn't need any cold compress!" I declared, irritated by these remarks. "It's my sixth sense!"

"Sixth sense?" A perfect howl of laughter went up from the crowd. "Sixth sense, you say?" Every one was convulsed with merriment, and several pointed significantly to their heads. All too plainly I could read their belief that the blow had shattered my wits!

In view of the fact that this impression was becoming prevalent, probably the best thing I could have done would have been to hold my tongue. But I was growing furious with the whole group of them, all the more so since I could read the scorn, the scepticism, the complacent sense of superiority that filled their minds. Hence I launched forth upon a reckless discourse:

"When you have seen what I have seen, my friends, you will have a right to talk! I have been through hell itself! In the heart of the Planetoid are

a swarm of beings from another world; beings ten times the height of a man, with three legs, and transparent—"

"Three legs! Ten times the height of a man!" the mob cut me short, with howls and screeches of laughter, accompanied by hoots of derision. "Three legs, you say? Tell us, brother, what brand of whisky do you drink?"

As I glanced at the amused faces of the crowd, I realized that there was not one—no, not one!—who took my words seriously.

Instead, I saw in the looks of several a frightening intention. Their last doubt of my insanity had apparently been removed; as soon as they were able, they would deliver me over for inspection by a group of alienists! If I were not careful, I would soon be an involuntary patient in a ward for "mental cases."

Not having any desire to enjoy this privilege, I quietly eluded my solicitous friends, and that evening secretly boarded an airplane out of the country. Three days later I arrived in America *via* trans-Atlantic air cruiser; and the following day was back at home in Iowa, where, remembering the mission entrusted to me by Magru and not daring to neglect my duties to the redoubtable strangers, I entered upon the most trying months of my existence.

Everywhere the curse of the Planetoid insisted upon following me. Being equipped with one sense more than the rest of humanity, I lived as one apart from humanity; I found that I knew too much, and that excess of knowledge was a curse which I could not escape. It was, for example, a great joy to be reunited with my wife, but that joy was ruined by the information, which I read in her thoughts, that she had been pleasantly philandering with a certain Major Roberts, and that my arrival, consequently was less welcome than I might have imagined. . . . Again, Major

Roberts, with whom I had been on friendly terms, was converted into a lifelong enemy, thanks to the coldness with which I received him. . . . And so it was in every circle which I entered. Although I discovered many virtues previously unsuspected, I could read so many petty vices, such jealousies, hatreds, suspicions, such egotism, such covetousness, such animosity in the minds of many people, that the perception of their weaknesses quite overclouded the realization of their merits, and I found it impossible to remain friendly with anyone. Indeed, within a few weeks, I—who had always been known as a humane, social being—had established a reputation as a morose, solitude-loving cynic.

In one respect, however, my reputation had risen, although hardly to my own advantage. It was declared that I had sinister and uncanny powers; I came almost to be suspected of "black magic." Mephistopheles himself could hardly have been thought more shrewd: if any one intended to deceive or defraud me, I could always discover the design in advance. Let a man, for example, try to sell me a "used" automobile with some concealed fault in the engine, and I would know about the fault even before he began speaking; or let some agent, reporter, or bill-collector plan to pay me an unexpected visit, I would guess his purpose and invariably be away when he arrived. Moreover, I could predict what my neighbors were to do tomorrow or next week (since I could read the intentions already formed); and thus I gained not a little prestige as a prophet, which, however, did not endear me to my fellow men, who, I could see, feared me more than they respected me.

Particularly in one matter concerned with the Planetoid, I was to astonish and bewilder all observers. With horror

and apprehension, I read of a plan which the Russian Government had just formed. Finding the Planetoid an obstruction on the landscape, a danger to life and the monopolizer of many square miles of valued land, the officials had finally decided to get rid of it. They believed that, by means of large siege guns placed at a distance of ten or twelve miles, they would be able to bombard and eventually destroy the Planetoid, whose presence had been giving rise to increasing uneasiness.

Naturally, I was able to perceive at a glance the folly of such an undertaking. Magru and his followers, by virtue of their superior senses, would know what was happening and would take effective measures to protect themselves. Let the aggressors beware! So alarmed was I, indeed, that I cabled a warning to the Soviet authorities—a warning which, needless to say, went unheeded. With the remorselessness of an inflexible intention, a battery of powerful siege guns—a battery great enough to reduce any city on earth to ruins—was placed in readiness within easy striking distance of the Planetoid; many rounds of ammunition were provided, skilled artillerymen were placed in charge, and the destruction of the Planetoid was announced as scheduled for noon on the fifteenth of December—exactly ten months after its arrival.

On the whole earth, there was apparently no man, except me, who did not believe the Planetoid doomed. Yet I persisted in my warnings, despite the ridicule heaped on me from all sides; persisted until the morning of the fifteenth dawned and still the inhabitants of the Planetoid had not taken their revenge. Only now did the first doubt assail me. Was it possible that Magru and his kin had let themselves be caught napping? Was it possible that they would actually let themselves be destroyed?

The hours of the morning wore away: eight o'clock, nine o'clock, ten o'clock, ten thirty—the great guns were already being trained upon the Planetoid, and merely awaited the signal, "Fire!" But that signal was never to be given. At precisely eleven occurred that event, that hideous, that devastating event, which the world has not yet been able to explain.

With overpowering suddenness, from the direction of the Planetoid, a lightning-swift sheet of red flame shot forth, accompanied by deafening detonations. Observers witnessed a terrific eruption of light in the neighborhood of the powder magazines, and in their nostrils was the odor of gases and smoke; they were shaken by thunders that jarred the earth for scores of miles; and when the shock had subsided and the dismayed investigators crept across the blackened scene, all that remained of the guns and their operators were the fractured and scattered but scarcely recognizable fragments.

But high in the distance, beautifully golden and serene as ever, the Planetoid shone in undisturbed splendor.

CHAPTER VI

Hoots and Jeers

MY predictions as to the outcome of the shelling operations established my reputation as a prophet more firmly than ever, and yet did nothing to solve the difficulties in which I was increasingly entangled.

Least of all did they help to rescue me from that stigma which had attached to my name from the moment of my emergence from the Planetoid—the stigma of one "not quite right in the head." Wherever I went, I was aware that old friends would look at me stonily, and nod significantly to one another as I passed; I was treated with an irritating,

condescending courtesy, and would frequently hear people chuckling slyly behind my back; my views were met with the amused interest which one gives to a clown, and my most accurate predictions were only taken as added signs of my freakishness; children would openly gibe at me and throw stones, and the very dogs were trained to bark at my coming.

But, of course, I needed none of these signs to acquaint me with the actual state of affairs. Being able to see into the minds of my companions, I could read thoughts such as, "Poor old Wilde! He's just a little cracked, but fortunately he's harmless!" or else, "Strange that they let Wilde run around loose! Well, I always did know he would come to a bad ending!"; or, again, "Sorry for his wife! Such a nice woman—never did see why she married him, anyway! He always seemed just a little queer to me!"

As best I could, I tried to suppress my indignation on reading such thoughts; but it is no wonder if I behaved coldly to many who posed as my friends, and consequently was regarded as "growing queerer every day."

Very soon I had learned not to talk about my experiences within the Planetoid. Would that I had learned this lesson a little sooner!—my reputation as a lunatic was originally founded upon my statements as to Magru and his kind. Of course, no one would believe in the existence of the giants, with their transparent bodies and three legs; my accounts of them would produce anything from mild amusement to uproarious laughter, but never any faint indication of belief. It was galling to realize that men, who will accept a thousand and one fables with a credulity wider than a barn-door, would not for a moment take my truthful reports seriously, for the reason that my experience did not correspond with theirs! It was

even more galling to be aware that I, the only man on earth with first-hand knowledge of the strangers from space, should be universally mocked, while the ignorant, being numerically superior, held themselves superior in wisdom as well. Never again speak to me of the sanctity of a majority opinion! For I, though right, was in an overwhelming minority—one against millions!

But I must not allow my indignation to overcome me; I must proceed to tell of the even more bitter misfortunes ahead.

Although I soon learned to speak as little as possible about Magru and his companions, there was to be no respite for me—the mission which I had to undertake was to prove my undoing. Not a day passed but that, in imagination, I would see Margu looming enormously above me, and would quail before the red flashes that emphasized his orders. "Do not imagine you can evade the contract!" his message dinned once more into my mind. "We shall catch your thought-rays wherever you are!" And almost it seemed as if I could catch his thought-rays. "Make haste! Make haste! You are being too slow! You must secure five of your kind for the voyage to Umgu! You must have them here within a year! If not, beware!..."

I will admit that this may not have been Magru's thought at all; it may merely have been the warning of my own uneasy fancy. But, in any case, it seemed real enough to me, and frightened me so that I behaved with disastrous recklessness.

Yet what was I to do but literally to execute Magru's command? What could I do but travel up and down the land, visiting villages, farms and cities in the attempt to secure five volunteers for the flight to Umgu? Alas! From the beginning, my efforts seemed doomed to failure. For who would heed the pleas

of a maniac urging them to fly to some other Solar System? With a sinking heart; with a sense of frustration and despair, I saw in what light I was everywhere regarded. All too late, I regretted that I had not been trained in salesmanship!—trained in the high art of selling anything not needed, sought or desired! Had I but had skill in this form of wizardry, I might have found not one or two nor even five but scores who, in the hope of a profit, would have gladly made the pilgrimage to Umgu!

But, as it happened, I could induce no one to take me seriously. The very tramps on the roads, the outcasts of the cities, the destitute unemployed, the hungry, the bedraggled, refused to better their lot by attempting a flight through space. Ridicule and mockery, mockery and contempt—this was the bitter fare I tasted for many days; while the more I tried to win my point the more pitilessly men scoffed. And not one recruit did I gain for Magru!

But worse still was to come—yes, far, far worse! Had my mind not been occupied with other thoughts, I would already have perceived the danger and fled.

It was during one of my brief visits home that the blow descended. I had just been having a heated argument with my wife—not only because I could read in her mind that the philandering with Major Roberts was reaching a serious pass, but because she insisted that I end my "insane hunt" for interplanetary travelers and return to "decency and sanity." Seeing deep into her mind, and realizing that she thought me raving mad, I became furious at her lack of faith in me, and in my anger I perhaps let my voice rise a little higher than was strictly necessary. Unfor-

did not know of a certain hasty telephone call, nor of the uniformed men being commissioned to investigate the "disturbance of the peace." . . .

My wife and I were just approaching the point of embracing and making up—at least, so I imagined. In another moment, I am sure, I should have felt her tear-stained cheeks against my own, and my jealousy of Major Roberts would have been forgotten—had there not come an emphatic clanging of the door-bell.

Instantly, as I leapt away from my wife, I was brought back to an awareness of myself. By means of the sixth sense, I knew at once who it was that stood upon our doorstep, and what was the purpose of the visit; and it is therefore not surprising if I was shaken by a gust of fright and obeyed my first wild impulse in the effort to save myself. . . .

Yet, in my panic, I made a grave mistake. Subsequently, during the trial, it was held material supporting evidence of my insanity that I was caught while endeavoring to escape through the bathroom window. . . .

The charge of disturbing the peace, as I realized from the first, was a mere pretext; the purpose of our neighbors had been to find a means of getting me before the authorities, so that the matter of my sanity might be adjudged. Curses be on the Piersons' meddling ways! I had done them no damage, even though we had not been on speaking terms, since that quarrel over the bridge table two years before. Be that as it may, they were to do damage enough to me. For immediately, when I came to court, the judge called for a psychiatrist; and when I protested and two policemen led me struggling away, I could see the magistrate smiling amusedly and tapping significantly at his head. . . .

Of course, the issue was preordained;

from the first, I never had a chance. Dozens of witnesses were brought forth to testify that I claimed to have entered the Planetoid and to have seen transparent giants ten stories high; and when I, correcting them, stated that in my judgment the giants were little more than five stories high, the court roared with merriment and seemed already certain of its decision. It appeared merely superfluous to offer evidence of my other preposterous remarks, such as that I had a sixth sense, and had been commissioned to find travelers for the planet Umgu—all the spectators found such statements deliciously amusing, and nothing that I could say had any effect to alter this impression.

Worst of all! It was claimed that I was not only a lunatic, but a dangerous lunatic, of a violent and intractable disposition. Even my wife, when put on the stand, admitted that I was "peculiar" and had become "another man" of late; and, besides, had grown unreasonably jealous and suspicious. Deceptive creature! I could read in her mind the thought that, should I be adjudged a lunatic, our union would be legally dissolved and she would be free to marry Major Roberts!

It is little wonder if, on hearing this testimony, I felt my heart give a furious leap within me, while I strained forward with tightening fingers as if to strangle my betrayer. Would any other husband, I wonder, have felt less wrath in such a situation?

But again I had been too hasty! My not unnatural anger was regarded as the culminating proof of my insanity; and as two policemen clubbed me back to my seat, I realized that, thanks to this last outburst, I should probably be sentenced to a padded cell. Oh, how I cursed the misfortune of the sixth sense!

The decision of the alienists was now

a foregone conclusion. The verdict, when delivered, was couched in no indefinite terms. I was a victim, it seemed, of "maniac-depressive insanity," complicated by an "acute psycholeptic condition" and a "progressive dissociation of personality" inducing a "liability to hallucinations and hysterical delusions."

Such an affliction, needless to say, was incurable, and I might therefore expect to pass my remaining days behind the bars of the State Asylum at Cold Haven.

CHAPTER VII

Recruits for Umgu

INCRECIBLE as it may seem, it was a relief to enter the asylum. Despite the mad howls and screeches that occasionally broke the peace of the day and night, my new environment seemed quiet and pleasant compared with the outside world. Besides, I had the feeling that I should now be released from my compact with Magru; that my inability to fulfill his orders would grant me exemption. And that thought alone sufficed, for a time, to make me forget the humiliation of my imprisonment.

But even in this hope I was to be deceived. I had been in my new residence merely for a week or two—merely long enough to be freed from my padded cell and allowed the liberty of the grounds—when thoughts of Magru and of the Planetoid began to obsess me once more. Indeed, I was sure I could catch Magru's thought-wave! "Hurry! Hurry! Hurry! You are wasting valuable time! Already more than nine months have passed; before the year is over, you must return with your five recruits! Hurry! Hurry! Hurry! You must return!"

Once more it may have been merely my own imagination; but the strength

Of course, the issue was preordained;

make me believe they were really from Magru.

But how fulfill his commands? Here was I, a prisoner at Cold Haven, and almost the only human beings I saw were the keepers and my fellow inmates. Out of such material, how find the means for satisfying Magru's orders, even if I could regain my own freedom?

Nevertheless, after I had given the matter a little thought, a daring idea leapt into my head. Why not build with the tools at my disposal? Why not secure the five recruits from among my present companions? True, they might not be exactly typical of the human race; but that would not matter to the natives of Umgu. . . . After I had enlisted my cohorts, chance would surely provide some avenue of escape. . . .

No sooner was this plan conceived than I set out to act upon it. At odd intervals, when the backs of the keepers were turned, I began to talk with the lunatics loitering with me in the asylum yard or passing their hours bending over the machines in the asylum workshop. And, from the first, I was encouraged; it was remarkable how much more reasonable my new associates were than the men outside. Few of them seemed to regard a voyage to the planet Umgu as other than a delightful jaunt; they would listen to me with earnest expressions on their believing faces, and the helpful spirit they displayed made me feel a warm affection for them all.

To be sure, the arguments I employed to obtain consent were not the same as I had used outside the walls—but it has always been my principle to adapt the means to the occasion.

There was, for example, my new friend Alexander—so called because he believed himself a reincarnation of Alexander the Great. My argument with him was brief and simple. "Remember your

old maxim!" I exclaimed. "New worlds to conquer! Come with me, and I will give you permission to conquer the planet Umgu!"

Upon hearing these words, Alexander grasped my hand fervently; and, with tears in his eyes, vowed to make me his Vice-gerent, who would share in half his conquests.

My next assault was upon a free-verse poet, who, scribbling meaningless lines without rhyme, reason or punctuation, believed himself to be the immortal Bard of Avon. "Come, Shakespeare," said I, "they don't appreciate you down here. We will fly together to the planet Umgu, where great poets are considered almost in a class with financiers!"

Shakespeare, upon hearing these words, launched into a rapturous discourse in seven stanzas—of which the import, so far as I could discover any meaning to it, was that I would clothe myself in immortal honor by escorting him to a more appreciative planet.

Greatly heartened at obtaining two such promising recruits, I now turned my attention to Billy Lightfoot, a famous "stunt" aviator, who had been so obsessed by the idea of speed (he felt ashamed at anything under 300 miles an hour) that the only way to curb him had been to keep him safely locked up at Cold Haven. . . . His consent was obtained in a moment; I merely had to promise that the Planetoid would make 300 miles a second—at which he beamed upon me benignantly, thrust out a grease-stained hand, and anxiously inquired, "When do we start?"

My fourth volunteer was Fitzgerald Shires, a stock broker who had lost his fortune and his mind in the collapse of Consolidated Securities. To gain his consent was a trifle more difficult; being a shrewd man of business, he felt

bound to do considerable bargaining before closing the deal, and his assent was withheld until I guaranteed him a bonus on all our export trade with Umgu.

A somewhat simpler case was that of Joe Hitchcock, who, like Shires, had failed mentally owing to his failure in business. My course with him was easy and direct; all I had to promise him was a fifty per cent share of all the gold, silver and diamonds found in Umgu. . . .

So far, so good!—I now had my five recruits. To get them away from Cold Haven and over to Russia was, however, by no means a simple matter. For weeks I schemed and brooded over this problem, but the more I pondered the further I seemed from success. None of my fellow conspirators—not even the resourceful Alexander—seemed to know how to elude the vigilance of our enemy, the guards, who kept us safely within view by day, and by night locked us up in a dormitory. Surely, nothing but a miracle could help us!

Meanwhile, it seemed to me, I could still catch the urgent pleas of Margu, "Make haste! Make haste! We are waiting for you! The year is almost up! Beware, lest you rouse our ire!" . . . In imagination I could picture the huge, half-transparent form of the giant bending over me, while his red lightnings flashed forth to scorch and sear . . .

And still the time was passing. Eleven months; eleven months and a half; eleven months and three quarters! Now only one week of the allotted period remained!

And then, all at once, the miracle occurred.

Appropriately enough, it was my sixth sense that came to the rescue. One night, just after we had all retired, a vivid thought leapt into my mind—a thought direct from the consciousness of

the keeper. "Hell and damnation, that was idiotic of me!" I could hear him swearing. "I shouldn't have forgotten to lock that dormitory door!" And I could hear him debating with himself, "Shall I go back and lock it now?" But I could see how tired he was, and how distastefully he thought of walking back again through the night from his home a third of a mile away; and, a moment later, I caught his decision, "Oh, well, guess I'll wait till morning! None of those numbskulls will know the door is open, anyhow!"

"Numbskull, am I?" I thought; and a flare of anger mingled with my jubilation and lent speed to my movements. Immediately, reaching over to the adjoining couch, where Billy Lightfoot slept, I whispered, "Come! Quick! Now's our chance!"

Ten minutes later, a stealthy band, fully dressed for the adventure, had filed noiselessly out of the dim dormitory, through the unlocked door, down the stairs and out into the night.

Cautiously I led them among clumps of bushes and around shadowy groups of trees; cautiously, and yet with fleet movements, for I did not know how soon the alarm would sound. . . .

Even at the moment of escape, I was a little bewildered by the seeming number of my followers; and a few minutes later, when we had scrambled over the fence and had gathered in a silent band in some adjoining woods, I received something of a shock. My five volunteers for the flight to Umgu had been increased to eight! Three asylum inmates had joined us uninvited!

CHAPTER VIII

The End of the Planetoid

OUR final escape is to be ascribed to a rare and lucky combination of circumstances.

At dawn the following morning my companions and I, weary-eyed and bedraggled from the night's ordeal, arrived at the great Lakewood Airport, just five miles east of Cold Haven. Fortunately, the report of our escape had not yet been broadcast, hence no one took any particular notice of the nine furtive individuals who stole forth from an unfrequented road and hastened across the field. Fortunately, also, one of the latest Belcher ten-passenger hydro-quadruplanes lay in readiness for the round-the-world voyage which was to have begun that morning; and owing to the early hour, and the fact that the landscape was still gray with the twilight, the guards were drowsing at their duties . . . at least, so I concluded, thanks to the sixth sense, which revealed their minds as dark blanks . . . Not until too late did any one give the alarm. . . .

Reaching the Belcher plane unmolested, we swarmed into it and fastened the doors. Billy Lightfoot, from the force of old habit, took his place in the cockpit, while I stationed myself beside him, prepared to give any assistance (for, in the course of my engineering experience, I had been trained as an amateur pilot). There came a shuddering of the engines as Billy's hands manipulated the familiar knobs and levers; and just as two men rushed toward us across the field, screaming and gesticulating excitedly, the plane gave a crazy lunge forward, and began to rise. . . .

To me it has always been a miracle that we survived that flight. Billy Lightfoot, at the controls of the plane, was true to his reputation for recklessness; he forced every spare inch of speed from the struggling engines, made a dare-devil descent in Nova Scotia for the purpose of refueling, then continued over the Atlantic to Ireland, where he made another descent that came within

a hair's breadth of overturning the machine . . . and immediately, seeing that we were under suspicion by the authorities, rose again in such a way as barely to avert another wreck.

However, the goddess of luck was with us, and we escaped; and, having food and fuel enough, did not seek another landing until we had reached Russian soil.

Two days of my allotted time still remained when we approached the neighborhood of Smolensk. Shall I ever forget with what an excited heart I felt the end of our expedition drawing near? With what triumphant joy I realized that, having fulfilled Magru's injunctions, I had not only averted his wrath but had earned the right to an award? Vividly now I recalled his words on our last meeting: "If you are a faithful servitor, we shall grant you any reward within our power. Think hard! For there is much that we may bestow."

After my dread experiences of the past year, there was now no possibility of hesitation. I had long ago determined to ask of Magru a boon that would lift the shadow from across my road. Unhesitatingly I should demand the removal of my sixth sense! With this accursed organ gone, I would no longer be handicapped by learning what others thought of me; I would become so ill-informed as to have apparently regained my wits, and would be able to live normally for the rest of my days. Yes, let me only reach Magru, and I might still patch together the tatters of my ruined life!

But alas for all my hopes! Just when I came to look upon the Planetoid as my one salvation; just when I began to think of greeting the giants from Umgu as one would greet old friends, I was doomed to another disappointment. Having speeded our flight to Russia; having hastened to the very spot where,

according to all computations, the Planetoid should have been, we were met with a crushing blow. Nowhere, upon the enormous flat expanse of the steppes, was the golden mass of the Planetoid visible! Nowhere, despite its mountainous size! Nowhere, although from our vantage point high in air, the vast shining bulk should have been apparent for hundreds of miles! Had it vanished like a shadow? Or were Magru and his followers scheming to dupe and deceive us?

As we slid down to earth in a wheat-field near the outskirts of Smolensk, the explanation all at once burst upon my mind. Had not Magru warned me that, upon my return, the Planetoid might be away on a little jaunt through the Solar System? Undoubtedly, this was what had happened. With a sinking heart, I realized that I might have to wait months for the removal of my sixth sense!

My surmise proved to be correct. Immediately after alighting I questioned some peasants who came crowding toward our plane (fortunately, I had learned to speak Russian during my years abroad), and was told that the Planetoid had risen and "disappeared in the sky" about a week before. This testimony was amplified somewhat later by members of a local scientific fraternity; the Planetoid, I was informed, was heading straight in the direction of Mars, and was under daily observation through telescopes throughout the extent of the earth . . . But that it would return I did not doubt.

Were I disposed to prolong this narrative, I might tell of the gracious reception accorded my friends and myself by the officials of the Russian government. Since Alexander, Shakespeare and the rest were ignorant of the native language, they did not betray themselves by their speech; and any little

aberrations that may have been observed in their conduct were indulgently explained on the ground that they were "foreigners." I accounted for their presence to every one's satisfaction by stating that they were scientists come to investigate the Planetoid; consequently, for the time being, they were allowed to wander about unmolested. After a few months, I was convinced, they would all be safely launched on their way to Umgu. Little could I foresee the disaster that was to shatter our plans!

It was only a week after our arrival in Russia that the stroke of calamity fell. As on the occasion of the first appearance of the Planetoid, scientists throughout the earth had been earnestly watching the flight of that brilliant golden body; daily reports of its position were made, and it was agreed that its destination was Mars, toward which it was heading as if on a mathematically charted course. Two weeks after it had lifted itself from the steppes near Smolensk, the Planetoid had covered nearly half the distance to our neighboring planet, and had dwindled to a mere point of light so small that only the most sensitive astronomical camera could pick it up at all. It was feared that it would soon be lost to sight entirely—but as yet no one suspected the fate that lay in waiting for it amid the silences of space.

Once more it was the observations of Dr. Russell McLinn that sent a gasp of surprise throughout the scientific world. On the thirty-first of October, 1966, nearly two years after the Planetoid's original appearance, the photographic plates at Whitney Observatory made an astonishing revelation. Instead of the thin line of light that should have designated the Planetoid in its motion across the skies, there was a nebulous flare which the watcher at first mistook for one of those "novae" or

temporary stars, which occasionally flame up without warning. Further investigation, however, proved that it could not have been a "nova"; it was moving at an observed speed possible only to a body well within the limits of the Solar System; moreover, in less than an hour, it had disappeared, leaving no trace against the undisturbed background of the heavens. And neither Whitney Observatory, nor any other observatory throughout the earth, could find any further sign of the Planetoid.

In the first startled moment of the discovery, Dr. McLinn hesitated to adopt the grim theory which instantly presented itself. But the passage of time removed all doubt. The testimony of the camera was undeniable: the Planetoid, gliding through space at a speed of many miles a second, had come into contact with one of those flying masses—one of those great meteoric fragments—which go shooting at tremendous velocities through all parts of the Solar System. The terrific heat generated by the collision had caused that nebulous burst of light which had startled earthly observers; but the débris had rapidly cooled and been scattered amid the waste spaces of the universe.

This view was confirmed by the fact that never more, though the most careful observations were made, was any sign of the Planetoid detected. Poor Magru! Powerful as he had been, he was not all-powerful! Might he and his companions rest in peace!

Except for a certain propitious occurrence, I would have been overwhelmed with grief at the loss of the Planetoid, feeling that it doomed me to retain my detested power of thought-perception to the end of my days. It is a singular circumstance, which I have never been able to explain, that at about the time of the Planetoid's destruction I heard a peculiar buzzing at the back of my head,

similar to that which I had noted when the sixth sense had been put into operation. And instantly a strange sense of relief overcame me, as though I had been freed from some intolerable restraint. To my astonishment and joy, I found that I could no longer read the thoughts of the servants who came to bring me my meals, or of the officials who gave me reports of the Planetoid! Blessed deliverance! My sixth sense had vanished, never to return!

Was it that between Magru and myself there had been some mysterious connection, which had snapped upon his annihilation? Or was it that my sixth sense had naturally been exhausted, and would have failed no matter what happened to Magru? I cannot say; but, in any event, I was hilariously happy, for now once more I could lead a normal life!

To be sure, the bump on the back of my head remains, as a permanent testimony to the operation performed by the strangers from Umgu. But I have done my best to let the hair grow over it and conceal it . . . Ten years have now passed since the disappearance of the Planetoid; and I, deciding not to return to America and risk another commitment to Cold Haven, have accepted a high engineering post with the Soviet government. Thanks to my happy union with a Russian lady, I have been able to forgive the defection of my former wife, who (as I read in a recent letter from a mutual acquaintance) was not long ago divorced by Major Roberts. . . .

But what as to my eight companions of the flight to Russia? Their mental condition not being suspected, they were allowed to wander undisturbed

across the face of Europe, and most of them have done quite well for themselves. Alexander, true to his dream of "More worlds to conquer!", has fought his way to renown as Dictator of a small East European State, and is today the idolized hero of millions, any one of whom would be instantly executed for speaking ill of his past. . . . Shakespeare, pursuing a hardly less illustrious career, has betaken himself to a "voluntary exile" in Paris, where he has won fame as editor of the radical literary magazine, "Dots and Dashes," which is said to be intelligible only to those who have studied telegraphy. . . . As for Billy Lightfoot, he has covered himself with glory and satisfied his craving for speed by an east-to-west rocket flight wherein, as the clock tells time, he arrived two hours earlier than he started. . . . Fitzgerald Shires, I am sorry to say, has not done quite so well, having spent three years behind bars for selling stock in a corporation that existed only in his own mind. But Joe Hitchcock, returning to his native land, has won his way back to esteem and respectability by his success in manufacturing munitions for South American wars, and is now something of a figure in politics.

With all these persons, as well as with the other fugitives from Cold Haven, I am in constant communication; for I find that all my former friends, being still suspicious of my mental state, have gradually left me off their social list; while the Cold Haven group alone remain faithful, the Cold Haven group alone are eager for reminiscences of the most amazing episode of my career, the adventure of the Golden Planetoid.

The End

Evolution

By
M. G.
LATHROP

All life at first was an empty wish
Evolving to something like jelly-fish.
It floated about in the briny sea
Without any will or energee.
It didn't swim, or creep or crawl;
It didn't have any legs at all.
It had no enemies that could bite,
So it wasn't afraid to stay out all night.

One day this awkward lump of jelly,
Floating around on its back—or belly,
Met, without any introduction,
Another lump of like construction.
They formed an attachment right away
And stuck to each other from that day,
Though really it wasn't a matter of heart—
They both were gluey and couldn't part.

That was the start of the multiple cell
That spelled the beginning of man, as well.
As time went on, in the scheme of things,
Some fish grew legs and some grew wings.
The changes occurred because of ambitions,
While the fish that stayed fish just had inhibitions.

Those who unduly of ancestry boast,
Whose forebears belonged to the blue-blooded host,
Whose dress is a swank and whose gait is a swish,
Should lower their snoots, for their grandpa was *fish*!

The Inner World

By A. HYATT VERRILL

Conclusion

The readers of this story are now certainly involved in some very mysterious incidents described in the story of the inside of our earth. The title of Chapter Eight, with which this final portion starts, would answer for this introduction, putting it all into three words.

CHAPTER VIII

Some Mysteries Explained

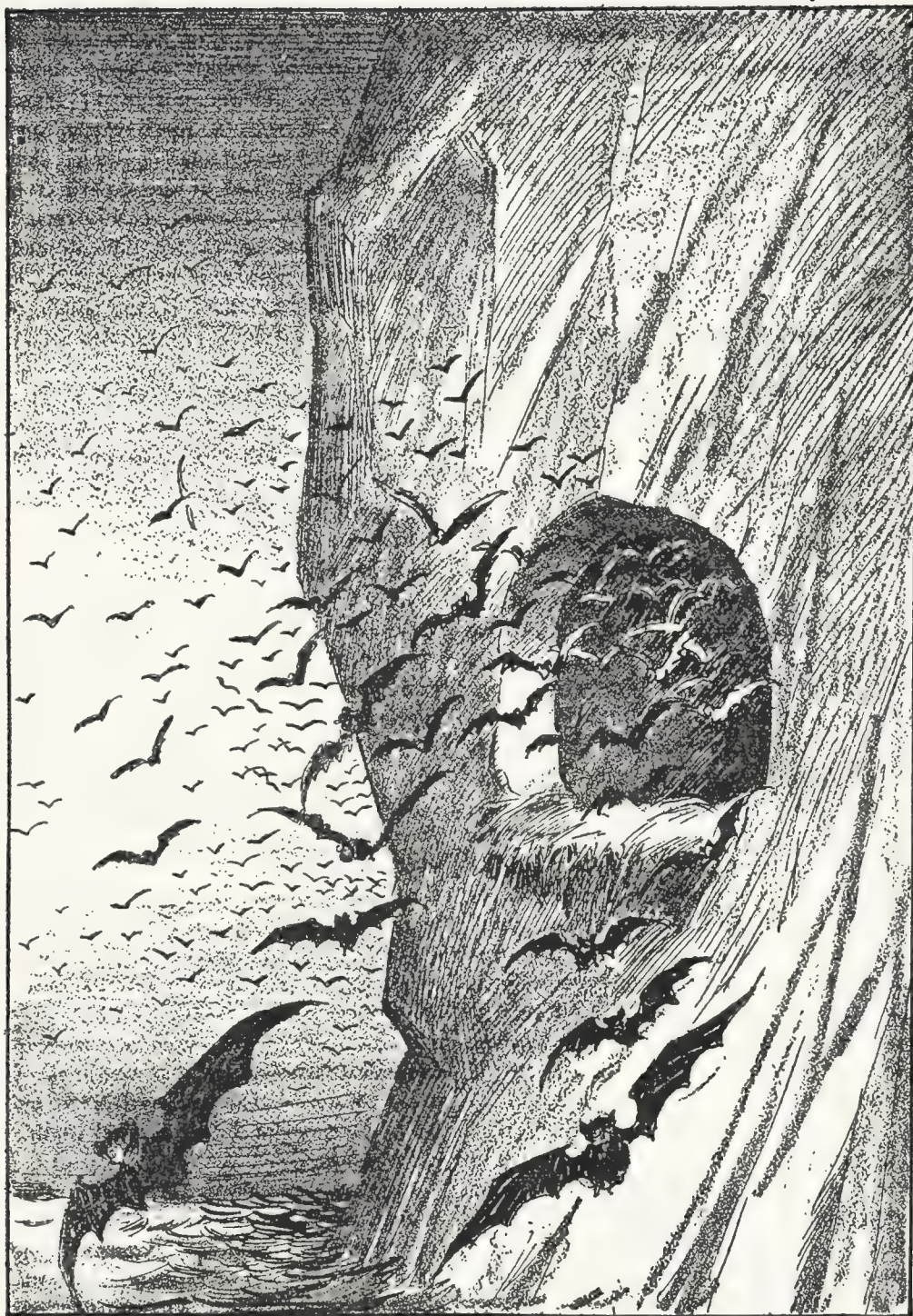
NEVER have I regretted anything more than I regretted not being an electrical or mechanical engineer, so as to be able to render a technical account of the contents of that great subterranean workshop.

But, after all, the mechanical features of the place are of much less importance than the methods, principles and operations that are followed here, and which, if they could be employed in your outer world, would revolutionize all your industries and life. But as you will understand when you have finished reading this, such a thing is wholly impossible, for conditions in this inner world are totally different from those of the world in which you live.

As for the mechanisms, suffice it to say, that they gave me the same general impression that I would receive in any great electrical plant, only far simpler and less confusing. The first peculiarity that impressed me was the entire absence of wheels. I had always supposed that wheels in some form were essential to mechanics, but there was not a wheel, gear or sprocket visible. Also, there was none of the clank and rattle which I was wont to associate with machinery. The only sound was a low humming noise, broken now and then by

a sharp crackle, like distant machine-gun fire, and the scores of busy Iss-dors, moving about, adjusting a device here, another there, were strangely quiet. As I stood there at the entrance, gazing into the cavernous chamber, it seemed to me that the creatures moving about within must bear charmed lives or must possess some incredible immunity to electrical discharges, for the place appeared ablaze with sparks, lambent blue flashes and quivering tongues of flame. Even as I stared, one of the Iss-dors moved across the floor and as he passed beneath a heavy bar of metal, dazzling zig-zag flashes shot down and enveloped the creature in blue fire. But to my amazement he paid not the least attention, and continued on his way unharmed.

But the thing which interested me most, and held my attention, was a great funnel-shaped affair in the centre of the floor with an inverted funnel-like contrivance set into the roof of the cavern above it. From the strange device came a steady subdued roar, like the noise of rushing water, and between the two apertures a magnificent wave of color played back and forth, changing from dazzling white to vivid green, from fiery crimson to golden yellow, from violet to palest blue. Instantly I knew that here was the source of that marvellous curtain of light that hung the puzzling "Northern lights," while



The cavern literally vomited the great beasts. Blinking as they emerged from the darkness into the blaze of lights. . . .

above the city. But I was looking at something far more wonderful, far more important than that, for although I was not then aware of the fact, I was gazing at the source of the Aurora Borealis!

I can almost hear your contemptuous snort of incredulity when you read those words, if by merest chance you ever do read them. But I assure you, my friend, such actually was the case. As I later discovered, the colored electromagnetic discharges, generated here in this inner world, penetrate rock or any substance as freely as do the electromagnetic radio waves with which you are familiar. And it is the overflow, as I might term it, of this force here, that passing through the earth's shell, causes the puzzling "Northern Lights," while the Aurora Australis is merely an induced display caused by certain of the waves being filtered by the constituents of the earth's crust. These, arrested at the point you call the North Pole, flow in all directions through the earth's shell until meeting at the other extremity of the earth's axis, and unable to travel farther, they are discharged into the air. Perhaps I have not made this wholly clear to you. As I recall that you are, or rather were, always demanding an ocular demonstration of my theories, let me put this in a different manner, in a way which will enable you to grasp the phenomenon and, if you so desire, demonstrate it visually.

SUPPOSE you have a sphere suspended in air, and pour oil or some other liquid upon the point of suspension. You will note that the liquid flows over the sphere forming an even film and adhering to the surface, until, at the point opposite that of suspension, it joins and drops off. That, in a crude manner, illustrates the action of the

magnetic waves which, interrupted by the earth's shell, flow coincidentally in every direction until they meet at the South Pole. There, unable to travel farther, and with a force vastly augmented, like a cumulative wave, they break the resistance of the earth's crust and spring into air. And as only certain of the original waves are thus filtered, the southern aurora, is quite distinct in appearance from that of the north, a peculiarity that long has puzzled scientists.

Why, I can almost hear you ask, does the intensity of the Aurora vary if my statements are true? For the simple reason that here within the center of the earth the necessity for greater or lower power varies as it does in any electrical plant in your world. And now, before I resume the thread of my narrative, and while on the subject of these phenomena, I may as well explain several other matters which had long been mysteries interesting my mind and which, if you have read this manuscript, have no doubt puzzled you.

Of course I did not acquire a knowledge of all these matters on my first visit to the city's power and lighting plant. Only after months of life in this incredible spot, only after I had acquired a good knowledge of the language, and only after I had become familiar with the principles and operations of the remarkable devices and potential forces in use, did I discover the true solutions of many mysteries that had confronted me from the moment I had arrived in this inner world.

In the first place there was that strange luminous glow I mentioned having noticed when first I regained consciousness and found myself in the abysmal blue darkness. The explanation, as well as the explanations of many other matters, lies in the fact that here there is no sunlight, no solar light-rays,

and no heat. And hence the atmosphere is filled with electrical and electro-magnetic waves or potential-charged electrons which cannot exist in the presence of sunlight. I suppose even you are aware that certain minerals and bodies emit light or are fluorescent when exposed to the action of certain invisible rays of the spectrum, to the so-called Roentgen rays, etc. In fact you must be familiar with this phenomenon, for in your practice you doubtless employ a fluoroscope. Very well, here, where rays or waves exist which are destroyed or absorbed by sunlight, practically all organic and inorganic substances are more or less fluorescent.

Among the few exceptions are the bat-like Oz-mooks whose odor, I am certain, is caused by a volatile oil which prevents their fluorescence, just as a coating of certain oils and waxes will prevent various minerals from becoming fluorescent when exposed to rays which, under normal conditions, will cause a brilliant glow to emanate from the substances. I am certain that such is the case, as I have found that the creatures' blood, as well as their dead bodies, after a few days, emit a considerable amount of light.

And it is very largely this lack of luminosity that makes the Oz-mooks such terrible enemies.

But to resume. Naturally, having discovered the cause of the luminous glow around objects, I jumped to the conclusion that the brilliant lights with which the various creatures are equipped were produced by organs which functioned to intensify and concentrate the fluorescence. But in that surmise I was greatly mistaken. The lights, my friend, are really artificial.

YOU scoff! You remind me that I have stated they were a part of the antennae or tentacles of the various be-

ings. Very well, so they are, yet artificial nevertheless; light-producing devices grafted on the living tissues! In short they are composed of a material which I can best liken to platinum sponge. As you know, platinum sponge, when exposed to any hydro-carbon gas in the presence of oxygen, will become incandescent. In somewhat the same manner the material grafted into the tissues of these beings, and known as pu-mulx or literally, "Light giver," becomes brilliantly luminous when exposed to the action of nitrogen. And thus the creature bearing the pu-mulx in its tissues, can vastly increase or decrease the amount of light by voluntarily controlling the amount of nitrogen that comes in contact with the material. How is this done? By the simple method of breathing, by expelling the vitiated air, high in nitrogen, from the lungs through a tube or channel leading to the pu-mulx. But in one respect the pu-mulx differs vastly from platinum sponge. It emits no heat when incandescent. Here then, is the secret of cold light. I have no slightest doubt that the cold light produced by fireflies and other forms of life of the outer world is the result of very similar conditions, probably the action of oxygen in the blood upon some substance produced and stored by Nature in tiny cells in the creatures' bodies.

This brings me once again to the subject of heat, or rather lack of heat, here in this inner world. When I revealed to you my theories as to the existence of a hollow earth, and you asked me how such a place could exist without a sun or light, I declared that there might be a sun or at least some object which took the place of that planet. And, oddly enough, I never seriously took into consideration the conditions which would of necessity result from an entire absence of sun or sun-

light. But for that matter, neither I nor anyone else could have foreseen what those results would be. In fact you of the outer earth are so accustomed to the sun, and to all the manifold conditions resulting therefrom, that you never stop to ponder on what the earth would be like, if there were no sun and never had been one.

Everything, I might almost say, depends upon the sun in that world I once knew. All the civilization, the progress, the life, the history, the geology, the scientific achievements of the outer world and of mankind are dependent upon the sun. Indirectly, all your machinery, all your activities, all your power and industries depend upon the sun. To be sure, you may not realize it; but without wood, coal, oil, natural gas, vegetation, how could you exist? And all your power (aside from water power) depends upon the stored-up sunlight contained in fuel of one kind or another. Without the sun or material which, containing sunlight or potential heat and power, could be used to produce light and heat, man could not survive. But here, from the very beginning of time, light and heat and all true vegetation have been non-existent. Yet hordes of intelligent, and in some respects superior beings have existed, and man can exist as my own presence proves beyond dispute, for, in place of sunlight, Nature or the Creator, whichever you prefer, has provided a force which, scarcely known and less understood by mankind, has been harnessed and controlled and made to serve every purpose here. This, my friend, is the magnetic force of the earth. The force which causes the compass needle to point towards your north, the force which man employs for a thousand and one purposes, but employs blindly and in minute quantities, in fact only in those infinitesimal quantities which, escap-

ing or leaking from its source within the earth, is partly captured and harnessed by mankind on the surface of the planet.

I say here lies the source of all earthly magnetism, all electro-magnetic phenomena. Exactly, beyond all question. For centuries man has been puzzling his brains over the magnetic compass; he has tried to find a logical theory to explain why, if a bar of iron is held parallel with the axis of the earth and is struck a sharp blow or is rubbed with a magnet, it will become magnetized. He has advanced theory after theory to account for magnetic iron ore, to find why the magnetic pole of the earth varies, to establish rules and regulations and laws governing electro-magnetism, But all to no avail. Why? Because man has always assumed that the earth is solid, that he is living on the surface of a mass of molten or semi-molten minerals. Instead, he is living on the surface of a hollow sphere, on a crust barely three-thousand five hundred miles in thickness—and much less in some places—and with sentient living beings—in many ways far in advance of mankind—using and controlling forces which they have mastered, and which originate in their inner world. And man, dwelling in blissful ignorance of the fact, tries to control and understand the by-products or discarded bits of forces which come to him.

ONE of the first things I discovered, or rather, I might say, reasoned out, was that this city of Jus-iss-zit is almost exactly beneath what you term the North Pole. Also, this is the thinnest spot of the earth's shell, being a scant two thousand miles in thickness. Hence here occurs the greatest amount of "leakage" of the magnetic forces in use. And as the amount employed varies, and at slack periods the surplus

is allowed to escape—like steam from a safety valve, if I may use the simile—the magnetic pole of your earth varies.

If I were writing all this with the certainty that it would reach the hands of scientists, and more especially students of electrical phenomena, I would go deeply into technicalities. But I very much doubt if it ever will reach the outer world, and even if it does there is not one chance in millions of its being read, and not one in a thousand that the finder will deem it other than imaginative fiction, so there is no need to burden it with involved formulae and equations. Putting it simply, the motivating force of the universe is unquestionably magnetism, as we call it for want of a better name. And although we talk glibly—or I should say my fellow men talk glibly—of electricity, electro-magnetic waves, etc., yet not one of you all can tell which is which or why or how one differs from the other. Of course you cannot! For all are one and the same in the beginning. All are included in the great magnetic force originating—on this planet—here in the hollow center of the earth. And only after this force has been used, controlled, tampered with by the inhabitants of this place, does this force reach the outer world in its various forms or combinations which you are pleased to classify. Can you imagine a man wholly ignorant of the origin or composition or use of coal, wholly unaware that the carbon had been burned to produce heat or to produce power, and finding smoke, cinders, gas and steam; can you imagine such a man being able to realize that the original source of the puzzling things was a forest tree or a peat bog? Yet that, in a way, is what your scientists are striving blindly to do. But I am digressing once more. The force, which for want of a better term in English,

I call by the outer world's term Magnetism, and which is known here as Bu-tzzt, takes the place here of the sun and sunlight of the outer world. Just as sunlight fills your air and you are bathed in it without ill effect, but with beneficial results—and scarcely aware of its existence, so here we are bathed in the rays or waves of magnetism without noticing it. And just as the sun's heat waves may be concentrated and transformed to power, so these magnetic waves are concentrated and utilized.

I CAN foresee another question arising in your mind. If there is no sun, no natural heat here, why isn't it cold? A very natural question, my friend, but easily explained. In the first place there are no polar ice-caps, no snow-covered wastes, no Arctic and Antarctic currents, no seasons.

We are surrounded by from one to two thousand miles of the earth's shell which naturally contains a certain amount of heat, and no doubt the magnetically-charged molecules of air and water maintain an even temperature. If you have ever been in a deep pit, in a mine or in an underground dugout, you will have noticed the same feeling I have referred to—the absence of appreciable heat or cold. And of course you are aware that, even in the coldest winter weather, the water in deep wells does not freeze. Aha! you exclaim. Water! Without the sun's heat to evaporate your sea and produce rain, what about fresh water? What about that rill you mentioned? And for that matter how do you have a sea in your inner world? Perfectly natural and logical questions, my friend; questions which arose in my own mind, I admit. As for the sea, it was unquestionably formed by the condensation of gases when the earth cooled,

just as the seas of the outer world were formed. And the heat of the sun is not at all essential to the evaporation of water. A certain amount of evaporation will take place when the water comes in contact with air, regardless of the temperature—even if below freezing—as you can readily demonstrate by placing a dish of water in a dark, cool cupboard. And this comparatively small amount of moisture, when condensed on the walls of this inner world, is amply sufficient to supply the few trickling rills which exist here.

Moreover, you must bear in mind that this inner sea is vastly larger in proportion to the land than the oceans of your outer world. Neither do the inhabitants depend upon the small amount of fresh water for their needs. All that they require is produced artificially, not by distillation as you might assume, but by extracting oxygen and hydrogen from the air and sea and recombining them artificially. That human beings have not long ago done this seems truly astonishing, now that I have seen how simple the process is. From time immemorial no one, as far as I am aware, has ever made an exhaustive study of the process with a view to inventing some mechanism to perform the same function. But if, by the grace of God, this manuscript ever reaches you or any other civilized man, and is brought to the attention of scientists, and if this suggestion should be followed out, it may save them time and trouble to know beforehand that they will be forced to draw upon the air for oxygen. Water, or H_2O , should, theoretically, provide the correct proportions of the two gases to produce water when recombined. But in practice—at least by the process used here—it does not work out. There is a marked decrease in the quantity of oxygen re-

covered, and to restore this the required amount is obtained from the air.

Unquestionably, as you were always most uncannily adept at picking flaws in my theories and assertions, you will pounce upon a seeming discrepancy where I say that heat is fatal to these beings and yet mention metal utensils and mechanical devices and will want to know how the metal could have been smelted and formed into shape without heat. The metal is not smelted but is obtained by an electro-chemical process, and it is not cast, rolled or hammered into shape, but is deposited in the desired form by the electrolytic method. A slow, inefficient process, you think! On the contrary, a very rapid and efficient method, as you would realize had you ever visited one of the great copper refineries—such as the Chuquicamata plant in Chile—where electrolytic copper is produced at the rate of thousands of tons each day.

I HAVE already said that if anyone doubted the truth of this narrative (provided it ever reaches my fellow men), they would be convinced if they examined the metal of which the containers are formed, for it is a metal wholly unknown to man. It is, in fact, a hitherto unknown element, one of the alkali group allied to potassium, sodium, etc., but, unlike them, extremely hard, durable and non-corrodable, and lighter even than aluminum.

Possibly, in fact probably, the various metallic ores known to man occur here, but as far as I have been able to ascertain there is only magnetic iron ore—which exists in vast quantities—and gold which is everywhere abundant and is used by these beings in place of copper.

I believe I have now explained all the puzzling matters I have mentioned, aside from the absence of wheels. As I have said, it seemed incredible that

mechanized industry could exist without this greatest of man's inventions, and I have been amazed at the manner in which the lack of wheels has been overcome. Very largely all mechanical operations—aside from those where magnetic or electro-magnetic forces are used directly—are carried on by means of vacuum. By passing terrific magnetic discharges through waste gases obtained in the production of the metal, which is called Oss-ott, an almost perfect vacuum is produced. And instead of driving pistons and machines by the force of expansion and explosions, these beings reverse the process and use vacuum, thus utilizing the normal air pressure as a driving force. It is by this means that the great reservoir, a natural cavern within the rocky wall above the city, is filled with sea water ready to be released and come rushing through the tunnel-like aperture to annihilate the terrible Oz-moks in their raids upon the town.

But there is one incident, I have mentioned, which I have forgotten to clear up. That is the impunity with which the Iss-dors passed through crackling sparks and flashing discharges within the power chamber. I was dumbfounded, utterly amazed at their apparent immunity to electrical discharges, veritable artificial lightning, so it seemed. Yet now I do the same and think no more of standing in the midst of the crackling blue flames than you would think of standing in a shaft of sunlight. Yet I have a most vivid recollection of my first experience. Carefully avoiding the areas where the discharges occurred, I passed beneath a great metal beam, and instantly darting, zig-zagging bolt of fire hurled themselves at me. But the awful terror that swept over me in the first fraction of a second gave way to indescribable wonder when I felt no ill effects, no

searing burns, not even the bone-wrenching sensation of an electrical shock. But I had yet to learn that it was not an electrical but a magnetic discharge that enveloped me, that whereas light produced by electricity is caused by resistance and is hot, light produced by magnetic force is obtained by conductivity and is cold.

CHAPTER IX

Civil War

I MUST pass very briefly over the next few months of my life, here in the city of Jus-iss-zit. There was plenty to occupy my mind and to keep me busy. I was rapidly acquiring a knowledge of the language and had found the Iss-dors, who formed my personal retinue, were excellent companions. Though at first all had looked precisely alike to my eyes, I soon learned to distinguish one from another, and presently I was surprised to find that they possessed as distinct features and characters as do human beings. One in particular, who was in command of the group, proved even more intelligent and human-like than the others. Nee-ser, as he is called, became my teacher, we were constantly together, and to me he is now like an old and very dear friend.

Much of my time, too, was spent in the great power plant, for here was almost endless material for study and investigation. And, strangely enough, it never occurred to me that the knowledge I was acquiring was of no possible value; that I would never, could never, return to the outer world and my fellow men. Neither did I dream of the events which were soon to occur and which would result in such untoward and radical changes in the entire organization and life of this inner world.

Of course, as I learned to converse more and more with Nee-ser and the other denizens of the city, I acquired a more intimate and accurate knowledge of many things which, hitherto, I had been obliged to reason out or guess at. Thus, when I came to learn the truth about the awful Oz-mooks, I found them to be a far more terrible menace than I had thought. Their homes were a vast labyrinth of caves on the opposite side of the sea—at the South Pole, if I may put it that way—and from time immemorial they had been making their periodical raids upon the city.

And, despite the fact that the inhabitants of Jus-iss-zit had devised means of resisting the beasts, and of destroying them wholesale, and were, in this respect, always victorious, yet their losses were terrific. Now all this aroused a new train of thought in my mind. If, as I had by then learned was the case, the various beings were produced artificially and in any numbers desired, and if, as it appears, the Iss-dors, the Tss-zors and the others were wholly lacking in fear and family ties and human sensibilities, why should they be disturbed by the loss of a few hundreds or thousands of the population? I puzzled over this for some time, but could think of no reasonable solution, and even when I questioned Nee-ser he could not throw light on the question. So I at last concluded that it was merely the universal instinct of self-preservation. But in this surmise I was mistaken as I discovered later, for despite the fact that they were created and reared by artificial means yet they possess a racial or nationalistic pride and the same inexplicable thing, called patriotism, that burns in the heart or rather mind of man. And despite the fact that the various types of beings were produced from identical

protoplasmic cells, they develop strong laws or caste prejudices and jealousies, each type feeling that the others are inferiors, despite the fact that they live and work in apparent harmony, forgetting all differences and uniting in the common cause when threatened by the invading Oz-moks. In this respect they are remarkably human. And I discovered that they possessed even more human traits, when I learned that the Iss-dors and Tss-zors both resented being ruled and regulated by the Cheek-horlks or "Big Heads." In this respect at least, the two most intelligent and really superior types were firmly united. But they were helpless, for the "Big Heads" held the whip hand. They were the creators as well as the rulers of the community; they alone possessed the super-intelligence and technical knowledge essential to the operation of the mechanisms. And no doubt matters would have gone on indefinitely as they were, had it not been for my arrival. But I never suspected that my presence had completely altered conditions until Nee-ser, and a delegation of his fellows, approached me with a proposition to overthrow the Cheek-horlks and make me the ruler of the community in their stead.

To say that I was amazed, completely dumbfounded at the suggestion is to put it mildly. And it placed me in the devil of a fix. If I agreed, it meant that I would be the leader of a revolution in which I had no interest and no desire to take part. On the other hand, if I declined, the Iss-dors and their allies, the Tss-zors, might, in fact probably would, put an abrupt and unpleasant end to my career on the principle that dead men tell no tales.

I was in a terrible quandary. Which ever course I followed was fraught with dire peril, for despite my repugnance—I might say hatred—of the "Big Heads"

which I had felt ever since my first experience with them, I had a deep respect for their intelligence and resourcefulness. And regardless of the superior strength, activity and fighting qualities of the Iss-dors and Tss-zors, I felt by no means certain that they would be the victors in a conflict where brute force was pitted against brains and science.

Unable to reach a decision, I decided to talk the matter over with Nee-ser who, by this time, I had come to regard as a real friend. Why, I asked him, did the Iss-dors and Tss-zors desire to do away with the Cheek-horlks and overthrow the existing order of things, and why did they think that I, an alien, a totally strange and distinct being from themselves, was fitted to be their ruler?

His reply was so startlingly like the reply that I would have expected from a human radical that I was astounded. Why, he demanded, should a few beings no better than—in his estimation inferior to—their fellows, control the entire community? Why should the Cheek-horlks, who were reared from the same cells as the others, arrogate to themselves the right to rule, the right to regulate the numbers, the types, the duties of thousands? Why should they have the right to decide whether a being was to be an Iss-dor, a Tss-zor, a Tu-jeer, a Mo-hal, an Uk-kul or a Cheek-horlk?

And as for myself, I was the solution to their problems. To place any member or members of the community in power would be merely a change from bad to worse. Moreover, not one of the various types possessed the brains, the knowledge and the executive and scientific ability to rule. I was a being apart, a being from another sphere, belonging to neither of the several types, hence there could be no jealousy among the factions. And had

I not proved—by my terrible phr-iss (revolver) and my deadly Ist-oss (knife) that I was a superior being?

I argued, expostulated. I pointed out that I did not possess the knowledge of the Cheek-horlks regarding the power plant, the mechanisms and the forces they employed. I even reminded him that eventually I would die and that there would be no other of my kind to take my place, and at last I felt that I had convinced him that matters were much better left as they were. Yet, as he left my presence, I thought he appeared disappointed and chagrined, if that were possible with beings wholly lacking in what we humans call emotions.

Little did I dream what was in his mind. Little did I realize that it was impossible to gauge the mental processes, the psychologies of these creatures by human standards. Little did I appreciate the fact that I was dealing with beings who, created and reared with a view to a highly specialized life and career, possessed single-track minds incapable of being swayed from a course; beings more stubborn, more blind to reason than the proverbial army mule.

Within the hour Nee-ser and his fellow Iss-dors returned. And I fairly gasped, speechless with amazement and indignation, when they informed me that the Cheek-horlks had been utterly destroyed and that I was the sole ruler of the entire community. The blow had fallen. I had nothing to say in the matter. Regardless of my wishes and desires I had been placed in full control of the city of Jus-iss-zit and its teeming population of weird, impossible, bizarre inhabitants.

Cold-bloodedly, without the least compassion—for compassion, pity, cruelty are non-existent in their minds—the Iss-dors had massacred the helpless “Big

Heads." But the existing order of things was not to be overthrown by a bloodless revolution. The swine-like, wingless Tu-jeers, the amphibious Mo-hals and the scaly, toothless Uk-kuls had had no part in the revolt, and as word of what had happened spread, these opposing factions attacked the Iss-dors and Tss-zors with blind, maniacal fury. All the pent-up class antagonism and jealousy that had smouldered in what passed for brains now burst into flame. And, willy-nilly, realizing that to refuse would be suicidal, I, as the leader of the revolutionary party, was forced to take part in the desperate battle raging in the streets of the city.

The terrible warfare against the bat-like Oz-mooks was nothing beside this civil war. Devoid of fear, oblivious of death, regardless of wounds, struggling hand-to-hand, tearing, biting, ripping, insane with fury, the creatures fought. Despite their comparative lack of armament and their pulpy bodies, the Tu-jeers hurled themselves upon the armor-clad Tss-zors and, bearing them down by sheer weight, tore them to pieces with their great tusks. The scaly Uk-kuls flung themselves upon their foes and, seizing their heads in their great, gaping mouths, literally devoured them alive. And the long-necked, mild-eyed Mo-hals became obsessed with a mad fury, and, grasping their enemies with their teeth, plunged with them into the sea and drowned them like rats. Surrounded by battling Iss-dors, I found myself in the thick of the mêlée. But the battle was not of my making; I had no enmity towards the opposing factions, and only, when some blood-crazed creature rushed at me, did I use my weapons in defense of my own life. And I was fully occupied in doing this. A flat-faced Uk-kul, its scale-covered body reeking with blood, its embryonic wings torn to ribbons,

one great unwinking lidless eye torn from its socket, charged me with open mouth. At the report of my revolver the remaining eye vanished like a bursting balloon and the fearsome beast rolled dying at my feet.

A bulky Tu-jeer lumbered forward like an animated tank, its bloody tusks gnashing, its pig-like eyes gleaming wickedly. I leaped from its path and fired three bullets into its pulpy side. As the brute plunged to the earth a gripping pain shot through my shoulder, I was swung off my feet and, held in the vise-like jaws of an infuriated Mo-hak, I was half-lifted, half-dragged toward the verge of the sea-wall. Frantically I struggled, and, knife in hand, stabbed and slashed upward and backward, striving to reach the creature's head or neck. I felt the blade strike home, the grip on my shoulder relaxed and I fell sprawling to the ground. Over me stood the Mo-hal, blood gushing from a deep slash in its throat, its body reared, about to throw its weight upon me and crush me to pulp. Quickly I twisted aside and fired blindly at the glowing membrane on the beast's chest. With a hoarse, choking scream it reeled and plunged into the sea.

The battle, fearful, desperate as it had been, was brief. As I rose dizzily to my feet the Uk-kuls and Tu-jeers were in full retreat, and the surviving Mo-hals were seeking safety in the sea. The carnage had been terrific. Bodies were piled everywhere. The battle ground was strewn with dismembered legs, tentacles and wings. Both sides had lost heavily, but the Iss-dors had suffered the least. Nee-ser had escaped almost unharmed. He had lost two of his legs, there were scars on his iridescent, armor-like shell, and one of his antennae lights had been torn away. But the injuries were trivial, and with his fellows and the Iss-dors he began

methodically to clear away the street, tossing bodies and fragments of friends and foes into the sea. And then a strange thing happened. The decimated Uk-kuls and Tu-jeers appeared on the scene, and as quietly and calmly as though the recent outbreak had never occurred, and without the least show of enmity, the Uk-kuls took charge of cleaning the city under the direction of the Tu-jeers. The specialized portions of their brains were again in control. The duties for which they had been bred and reared were again paramount, and all enmities and differences were forgotten.

The incident struck me as most remarkable at the moment. Then I smiled to myself as I realized that the behavior of these beings was exactly in line with the actions of mankind under similar circumstances. I recalled how, during the World War, the Allies—battling furiously with the Germans—accusing their foes of committing fiendish atrocities, vowed that never again would they traffic with Germany, that after the war was over the Germans would be boycotted, socially and economically. Yet within a few hours after peace had been established German firms were advertising in British and American papers, and within a short time all had been forgotten and commerce and trade and social intercourse had returned to pre-war conditions.

With the revolution over and the life of the city again restored to its normal conditions, I had time to give serious thought to the problems I now faced. And I realized fully for the first time how very serious those problems were.

First of all, I must devote all my energy, all my time, all my mind to mastering the intricacies of the power and lighting plant. To be sure, the mechanics, laborers and operators were

quite capable of keeping the plant going as long as all went well. But they were little more than machines themselves, and possessed no knowledge of the underlying principles involved. This problem, however, did not worry me greatly. I had already devoted considerable time to studying the forces and apparatus, and had acquired a fairly comprehensive idea of the principles involved. And though I have never specialized in mechanics or engineering I had little doubt that I could handle this portion of my manifold duties. But there was another and a far greater problem that did worry me. I had not the remotest idea as to how the Cheek-horlks had created, propagated and reared the embryos of the various types of beings. The breeding room or nursery, the Toks-chat, as it was called, had been under the sole control of the defunct Big-Heads. No one but they had had an inkling of what took place there, and, despite my knowledge of biology, and what I had learned from my fragmentary conversations with the Cheek-horlks, I realized that only by experimenting could I hope to succeed in the artificial propagation and rearing of future generations of inhabitants, and that the chances of success or failure were all in favor of failure.

But there was one consolation. I would have plenty of time to experiment, for there was a large supply of well advanced larvae on hand, and as these, when matured, would more than offset the losses caused by the revolution, there was no pressing need of creating a new batch of embryos.

Finally there was the problem of the Oz-moks. Although they had been repulsed with heavy losses on their last raid, Nee-ser assured me that they would return, and herein lay a very grave danger and my most serious problem. Hitherto, the losses sustained by the

inhabitants of the city had been of no real or lasting importance, for they could be rapidly replaced by the proper proportion of new Iss-dors, Tss-zors, etc. But unless I could discover the secret of producing new individuals of the various types, the doom of the community would be sealed if the Oz-moks' attacks continued. With each raid, the population of Juss-iss-zit would be decreased, there would be less and less chances of victory, until eventually the savage, bat-like beasts would triumph and the last inhabitant of the city would be destroyed. Not only would I have to discover how to produce new individuals to take the places of those lost. I would have to learn how to produce the right types, especially the Iss-dors and Tss-zors, who formed the principal defensive and fighting forces.

There was only one other solution to this problem, and that was to prevent the Oz-moks from attacking the city; to take the offensive and strike such a decisive blow at the Oz-moks as to assure freedom from their raids for a long period to come.

The fact that such a thing never had been attempted seemed to me to increase the chances of success, for the Oz-moks would be off guard and might be taken completely by surprise. But I felt that nothing could be left to chance, that the raid if made must be planned and carried out in such a way as to insure a complete victory, and I devoted my mind to devising a method for accomplishing this.

CHAPTER X

The Raid on the Oz Mooks

IT may appear strange to you, my friend, that I should have taken any deep interest in the future or the fate of these beings; that I should have devoted all my energies and my

thoughts to safeguarding them, to solving their problems, and to maintaining the community over which I had been placed as ruler.

But I was actuated by personal motives, aside from any moral obligations which I felt. My own existence was at stake, you must remember, for I was convinced that any great calamity would result in my death, and by this time I had abandoned all hope of ever returning to the outer world.

Hence, in a way, the inhabitants of the city had become my people, and their interests and my own were one.

It was while I was busy in the power plant, perhaps a week after the revolution, that it first occurred to me that it might be possible to manufacture weapons with which to attack the Oz-moks. Despite the natural weapons of the Iss-dors and Tss-zors, the superior strength and size of the bat-like beasts were in their favor in a hand-to-hand conflict. But if my forces could be provided with weapons which could be used effectively at a distance, the advantage would be all on our side. But how could this be done? Although there was an abundance of metal which could be fashioned into any desired form, firearms were of course out of the question. Spears or lances would be but a slight improvement over the armed legs and jaws of the Iss-dors and Tss-zors. I might make javelins which could be hurled with deadly effect, and finally there were bows and arrows. But I soon found that the Oss-ott metal did not possess the resiliency essential to bows, although excellent arrows could be made with the light Oss-ott for shafts and with gold heads. Had I possessed means of smelting, I might have made use of the abundant iron deposits and could, I am sure, have produced steel. But there is nothing in the line of combustible fuel here, and, even

if there were, the heat necessary to smelt iron ore and forge steel would be fatal to the Iss-dors, who are the only metal workers.

Not until I had thought of making bows had I realized how woefully handicapped I was for lack of wood. Possibly, I thought, some of the terrestrial marine invertebrate growths might serve in place of wood. With this idea in mind I sent a number of Iss-dors to collect samples of every form of growth with branches or stems long enough to serve my purpose. But while some were strong, woody or fibrous, none were elastic or springy enough to use. I then remembered that the Eskimos use bows made of whale-bone, and I kept the Mo-hals busy for days bringing me samples of every form of marine life. And marvelously strange and weird some of these are! But there are no whales in this sea, no true fish and the highly specialized and curiously developed reptilian creatures which take their places held no interest for me, as far as my purpose was concerned. I was about to give up all hope of being able to find a material which would serve for bows when, as is often the case, I found it under my very nose, so to speak. Inspiration came to me as I was trying to explain my wants to Nee-ser. Almost unconsciously my eyes were fixed upon his jewel-like natural armor, the hard, horny shell that covered his body, a shell composed of the lightest, strongest product of Nature: chitin. That was the material I needed! It was present everywhere—the Iss-dors and Tss-zors were encased in it. Their legs were made of it, their beaks were composed of the same material. And myriads of the marine and terrestrial forms of life, all the crustaceans, had external skeletons of chitin. But how and where could I secure the material in sufficient quantities and of sufficient size to make

bows? I looked longingly at the iridescent covering of Nee-ser's body, and the beautifully curved segments of his chitinous armor. A strip of that—but I could scarcely destroy scores of the beings to provide their fellows with weapons. And then, suddenly, I remembered. Among the strange beasts brought to me by the Mo-hals there had been some attenuated, squid-like cephalopods, fully six feet in length. Unless they differed markedly from all other cephalopods they must possess "pens" or simple skeletal formations to lend strength and rigidity to their bodies. And unless, by the perversity of Fate, they chanced to be calcareous, these "pens" would be of chitin, and a very tough elastic form of chitin at that. I sprang up, and, telling Nee-ser to summon all the Mo-hals, I hurried to the water-front.

As usual, a crowd of the amphibious beings were already there, and rapidly I explained to them what I wanted and sent them off on their submarine hunt. By the time the creatures summoned by Nee-ser arrived, the first of the Mo-hals was back with one of the squirming, repulsive-looking giant squids. Ripping the creature open with my knife I exposed the ocre-yellow horny-looking "pen". I shouted almost aloud with delight and satisfaction. It *was* chitin, and chitin which, even in its fresh state, was as elastic, as resilient as tempered steel!

If only there were enough of the cephalopods in the sea, I could provide bows for an army. But I need not have worried over that. The hordes of Mo-hals brought the creatures ashore by hundreds. As fast as the cephalopods were delivered, the Iss-dors, under my direction, ripped them apart and removed the "pens", and rapidly a great pile of the chitin was accumulated.

The first bow that I made exceeded

all my expectations. Stringing it with a cord made of the twisted fibres of a tree-like alcyonarian, I tested its strength and found its pull so great that I could not draw it more than half-way to my ear. Then, as a crowd of my subjects looked on, filled with curiosity and no little awe, I fitted an arrow to the string and let drive at a tough, massive sponge I had set up as a mark. The range was short, the target was large, and I could not well have missed. But as the missile thudded into the fibrous sponge, and, passing through it, nicked into the soft limestone beyond, I could have danced with joy, and shrill cries and trills and siren-like shouts arose from the assembled throng. Even their minds could grasp the possibilities of this new weapon, and Nee-ser and the others crowded about, all anxious to have a try with the Twa-put, as they instantly christened it. Although a bit clumsy at first, and although one of the Iss-dors loosed the arrow so wildly that it brought down an Uk-kul (which merely resulted in a greater appreciation of the weapon) they very quickly got the hang of it. And as I watched them, it suddenly dawned upon me that in each individual I possessed several potential archers, for with their multiple hands or feet, whichever you prefer, they could use two or three bows at the same time!

The next few days were busy ones. The Iss-dors, splendid workmen, once they understood what was expected of them, fashioned bows by the score. In the workshops arrows were being manufactured by the gross, and I even enlisted the services of the Iss-dors to gather fibre and twist it into bow-strings. By the end of a fortnight we had enough bows and arrows to supply all the Iss-dors and Tss-zors which I felt could be spared from the city on our prospective raid, and for hour after

hour I had them practice using the weapons, until all had become really expert archers. But I had abandoned my idea of equipping them with more than one bow each, and instead had decided to add a supply of javelins to their armament. And I can assure you, my friend, that an eight-armed chitin-armored Tss-zor, equipped with a powerful bow and arrows and a sheaf of javelins, is a warrior worthy of the name, and is only excelled by an Iss-dor similarly armed.

At last all was in readiness for our raid upon the Oz-moks. And so obsessed with the militant spirit had I become, so deeply engrossed in the warlike preparations, and so anxious to witness the battle, that I threw aside all caution, disregarded all danger, and determined to lead the attack in person. The raid of course was to be made by air, and naturally I could not fly. But a Tss-zor had carried me easily and safely across the sea to the city when I had first arrived, and no aeroplane ever devised by man was such a safe means of aerial transportation.

No doubt you will laugh heartily when I confess to you that never in my life have I felt prouder of achievement than when, borne in the grasp of a huge Tss-zor, I rose above the city and gazed upon the armed hosts of winged warriors, rising in squadron after squadron from the great semi-circular esplanade, their myriad lights gleaming like countless shooting stars, their iridescent armor flashing back the multicolored rays of the gorgeous aurora stretching upward to the zenith. For me, a scientist, to have been in that position, to be leading an army of incredible beings, denizens of the inner world to battle was, I admit, the height of incongruity. But I had become so accustomed to incongruity at every turn that it did not, at the time, strike

me as being other than quite a natural and consistent thing to do.

As soon as we were well away from the city all lights were extinguished and in absolute silence we sped onward. Indescribably weird appeared the hundreds of ghostly flying figures, like faintly phosphorescent wraiths floating through the abysmal, indigo void. For hour after hour we sped on, and then suddenly, out of nowhere, as if conjured from the air, great, luminous forms appeared rushing toward us, converging from every direction. The Oz-moks were upon us!

Though we had failed in our initial purpose to surprise the beasts, although we had been transformed from the attackers to the attacked, there was no panic, no confusion among my warriors. Instantly their lights flashed out, a thousand searchlights stabbed the darkness with their beams and revealed hordes of great, leathery-winged monsters dashing at us with gnashing fangs. But the sudden glare of the myriads of lights dazzled and confused them momentarily. With sharp, high-pitched cries they checked their onward rush; they turned, dove, swung aside, bumping into one another, struggling, in a confused, half-blinded, disorganized mob. And in that instant a thousand bows twanged, a thousand gold-tipped arrows flashed through the air. Screams, cries, squeals rose in a hideous, unearthly din from the Oz-moks, as the missiles buried themselves in furry bodies, tore through beating wings and reached many a vital spot.

Scores of the monsters fell, gyrating madly, into the black abyss below. Scores, badly wounded, made desperate efforts to escape. But scores were unharmed or but slightly wounded, and, like the maddened wild beasts they were, they hurled themselves at us. Again bows twanged and a shower of

arrows sang through the air. The range was short, the Oz-moks were large marks, and the Iss-dors and Tss-zors had drawn the arrows to the heads. The oncoming bat-like hosts recoiled like charging infantry in the face of artillery fire. With incredible swiftness a squadron of my Tss-zors swept above the panic-stricken enemy. At the same instant the Iss-dors flashed to right and left, and as the Tss-zors hurled their heavy javelins from above, the Iss-dors delivered a volley of arrows from either flank. Surrounded, assailed from above and from both sides, unable to come to grips with their enemies, the Oz-moks milled and crowded, entangling wings, snapping savagely at one another, their one desire to escape from the trap into which they had unwittingly fallen. But there was no way of retreat left open. Even when they dove, like swooping eagles, to seek safety below the warring hosts, a dozen of my warriors would flash downward and drive arrows or javelins into the fleeing monsters from above. Not a single Oz-mok escaped. The entire force was wiped out, and not one of my army had been injured. It was a glorious victory, but our work was not yet done. I had planned to utterly exterminate the Oz-moks or so decimate them that for years to come there would be no fear of them raiding the city, and the hundreds or more we had destroyed were only a portion of the hordes of the beasts inhabiting the caverns far to the southward.

THERE is no necessity of going into details of what followed. Again and again we met foraging parties of the loathsome, bat-like creatures, and each time the encounter which followed was merely a repetition of the first. How long we had been on the wing before we neared the Oz-moks' caves I cannot say, but it certainly was many

hours after leaving the city before we reached the vicinity of the caverns. No guide was required to direct our course. Our olfactory organs were amply sufficient, for the nauseating, musky stench from the beasts' lairs reached us when we were miles distant.

For some time we had met no cruising Oz-moks. Not one of those who had beset us had survived to carry warning of our approach to those within the caves, and I felt certain that the surprise would be complete. It was.

In silence and darkness my forces took up their positions about the yawning black holes in the stupendous cliff. Clinging like flies to the rocks, Iss-dors crouched above the entrances to the caves, and in open formation the Tss-zors formed in line on either side, hovering on vibrating wings in mid-air. When at last all were ready, a flying squad of my forces poised for an instant before the entrance to the cave. and then, with flashing lights, rushed headlong within the cavern. It was a mad, brave, heroic thing to do—to fling themselves into the dens of their ferocious enemies; but, as I have said, these beings are absolutely devoid of fear, and death means nothing to them. Scarcely had they vanished from our sight when screams, cries, siren-like screeches, a pandemonium of confused sounds issued from the cave. The next instant our warriors reappeared—over half their number missing—and close in their rear came the Oz-moks. The cavern literally vomited the great beasts. Blinking as they emerged from the darkness into the blaze of lights, they hesitated at the entrances of their lairs, milling and crowding, and into this seething mass of bodies the Iss-dors clinging to the rocks above drove javelins as fast as they could hurl the weapons. Dozens of the monsters were struck down be-

fore they were able to spread their wings and launch themselves in air. And the moment they took flight they were compelled to run—or rather fly—the gantlet of our forces. The slaughter was indescribable. Yet so vast were the numbers of the creatures that many escaped, and hurling themselves at our lines they bore down my warriors by sheer force of numbers and, oblivious of spears and arrows, came to grips with their enemies. But compared to those destroyed those who escaped were negligible. It seemed as if the stream of monsters issuing from the caves would never end, as if they would be spewed forth forever, and grave fears assailed me that our arrows and javelins would be exhausted long before the last of the Oz-moks had come from their dens.

In that case the tables might well be turned. Our victory might become transformed to a rout, a massacre. But I had not counted on the intelligence of my Iss-dors. Elated at the deadly effect of their new weapons, the creatures had no intention of losing them, and as fast as an individual exhausted his supply of arrows and javelins he would leave the ranks and swoop down, to return, a few moments later, with a new supply of weapons salvaged from the dead bodies of the Oz-moks floating on the surface of the sea below.

I need not weary you with further details of that epic battle. Enough to say that when the final Oz-mok had come forth from its den we had dealt a decisive, a terrible blow at our enemies. And though we had not exterminated the race, only a few scores out of countless hundreds survived.

Neither had we escaped wholly unscathed. Several dozens of the Tss-zors had fallen, the losses of the Iss-dors had been fully as great, and scores bore wounds of battle as, triumphant, we

left the stinking cave behind us, and sped towards the city with lights blazing bravely and free from all danger of being beset by the fearsome Oz-moks.

CHAPTER XI

Amazing Developments

RAPIDLY the time passed. I had much to occupy my mind and to worry me, for despite my every effort, despite endless hours of experimenting, I failed utterly to produce life synthetically. And unless I could create new larvae the entire population was doomed to extinction. What of it? you ask. What of it! Good God, man, can you imagine, can you conceive of dwelling here alone—alone in this weird inner world? Alone with only the monstrous, surviving Oz-moks, the bizarre, terrestrial invertebrates, for company? Alone in a city of the dead, unable, single-handed, to maintain the lights, the water supply; cowering in the silence and darkness; fearing to go forth lest a ravenous, hovering giant vampire should seize me; dying slowly or more probably going raving mad? No, a thousand times No! Inhuman, grotesque, even repugnant as some of them are, these beings are companions, living, sentient creatures, and to be surrounded by them is a million times better than being alone. No wonder, then, that I worked like a madman to try and produce the germ of life which would insure future generations of inhabitants of the city. And in the meantime the larvae on hand grew, and, knowing no other course to follow, I fed them all alike, for the secret of developing the various types of beings was as great a mystery to me as the production of living organisms from the slim-like cellular tissues. With no little trepidation I watched the various larvae approach maturity. Some, I knew,

would appear as Iss-dors, for their larval forms were easily recognized. But the others! Would they prove to be Tss-zors, Mo-hals, Uk-kuls or Tu-jeers, or would they be some new and horrible freaks?

But, despite my speculations and my concepts, I was utterly unprepared for the actuality. Picture if you can my amazement, my horror I might say, when larva after larva developed into the stalk-eyed, noseless, scarlet-skinned Cheek-horlks—the repulsive “Big-Heads”!

There was but one thing to be done. I must destroy them as fast as they matured. If once they were discovered, I would unquestionably be put to death myself, for never would I be able to convince the Iss-dors and Tss-zors that I had not purposely produced a new brood of the Cheek-horlks, that I had not conspired to reinstate the beings in control of the community.

It was a terrible effort to bring myself to kill the creatures. Despite the fact that there was nothing human about them, yet I felt like a murderer as I put the beings out of the way and destroyed all traces of their existence.

And never will you realize what relief I felt when the Iss-dor larvae matured, gorgeous, fully developed, magnificent creatures far larger and more intelligent than any I had seen, the result no doubt of feeding them on the improper diet during their larval stage. But not until later did I realize what untoward results my ignorance of their food had brought about. The Iss-dors I had reared possessed sex! There were males and females among them!

Can you imagine, can you conceive what this meant to me? The creatures could breed! They could propagate their kind! A continuation of life was assured! No longer need I dread being alone, the sole surviving being here.

No more need I rack my brains and toss feverishly through sleepless nights striving to solve the secret of producing life artificially.

What if I couldn't produce Tss-zors, Tu-jeers and the other types? The Iss-dors laid claim to being the original race, they were by far the most intelligent of the lot, they were the most companionable, the most human of all, and I had produced a brood of super-Iss-dors, and had provided the way for them to increase and multiply and become the dominant—more, the only—race.

Little did I dream that by accidentally producing these sexed Iss-dors I had jeopardized my own life. Yet such was the case. I am certain that my doom is sealed, that my end is near. During the months that have passed, since the Iss-dors commenced to breed, they have increased with amazing rapidity. And quite naturally the Tss-zors—as well as the other types—have become excited, angry, threatening. They have demanded of me why I have not produced members of their types capable of propagating their kind. They have openly accused me of plotting with the Iss-dors to destroy all other types and to take full possession of the city. And war—terrible, devastating civil war—is imminent, a war of pitiless extermination, a war which will not end until the last Tss-zor, the last Tu-jeer, the last Mo-hal and the last Uk-kal has been annihilated.

Nee-ser has admitted this to be the case. And if I do not fall during the battles that will rage, I feel confident that I will eventually meet death at the hands of the Iss-dors. They possess no sentiment, no pity, no gratitude. Their sole ambition is to become the only sentient beings in this inner world, and as soon as my services and my presence are no longer essential to them they

will put an end to me with as little compunction as they will destroy the last Uk-kul or the last Tss-zor.

* * * * *

I have made a tremendous, a most momentous discovery. Although my escape by the way I reached here is forever barred, I have discovered a means of communicating with the outer world! It seems incredible, miraculous, but it is true!

Deep within the cavern of the reservoir back of the city I discovered a narrow shaft, a blow-hole caused no doubt by gaseous bubbles when the molten world cooled off; and this shaft, I am positive, penetrates through the two hundred miles or more of the earth's crust and communicates with the air of your outer world! I am certain this is so, for there is a strong upward draft at times and at other times a strong downward draft of air. And though it is impossible for me to escape from this inner world and ever again to look upon the faces of my fellow men, I feel that there is a chance—a very good chance—that I may be able to give to them, to you, perhaps, an account of my life here and of my amazing discoveries.

My plan is this: I shall make a number of spherical containers of the light Oss-ott metal. In each I shall place a copy of this manuscript, and having filled the containers with hydrogen I shall release them in the shaft when the draft of air is upward. Possibly they may never reach the surface of the earth. Possibly if they do they may float about in your atmosphere until the hydrogen has leaked out and they drop to earth or into the sea and are never found. But possibly one or more may travel upward to the sunlit atmosphere of your world and may be found, and thus may my fellow-men receive the

message from the inner world, probably a message from the dead.

But the Iss-dors will never kill me. Never will those whose existence I have insured tear me to bits. For long I have carefully conserved a loaded cartridge, and when the moment comes I will put a bullet through my brain rather than be put to some terrible death by the beings I have saved from annihilation.

When the end may come I cannot even guess. At any moment red war may burst into flame. At any time the Iss-dors may decide I am no longer needed. Perhaps—no, in fact probably

—long before you or others read these words—(if by the grace of God they are ever read), my life will have been ended. And if I could but know that this manuscript had found its way into the hands of my fellow men on earth I would die supremely happy and content.

And now, my friend, farewell. Tomorrow I release this and the other hydrogen-filled spheres. May God guide them to the outer world I once knew and may He see that this narrative reaches the hands for which it is intended.

(Signed) Henry Marshall Thurlow."

THE END



Science Questionnaire

1. What is the π , sometimes spelled "pi" and always pronounced so? (See page 6.)
2. Why have we only ten basic numbers, or including 0 ten digits? (See page 7.)
3. What is the relation of shoes to the decimal system of notation? (See page 7.)
4. What is the Delian problem? (See page 9.)
5. What suggestion is to be found for a metal, cold resisting, garment? (See page 14.)
6. What does the mind do in molding sensations? (See page 22.)
7. Give a sequence of mental action? (See page 23.)
8. What is the relation of thought to mind? (See page 23.)
9. Where does the orbit of the asteroids lie? (See page 48.)
10. What title is bestowed upon the asteroids? (See page 48.)
11. Are there a number of asteroids? (See page 48.)
12. What is the shape assigned by astronomers to celestial bodies? (See page 50.)
13. How might that shape be departed from? (See page 50.)
14. What diameter should a planetary plane have to resemble a mountain when on the surface of the earth? (See page 53.)
15. What is the effect of platinum sponge on a mixture of hydrocarbon gas and oxygen? (See page 79.)
16. How does man depend upon the sun? (See page 80.)
17. Can water evaporate without the heat of the sun, or in the dark? (See page 82.)
18. What is a nova? (See page 100.)
19. What are Wolf-Rayet stars? (See page 100.)
20. What is a light year? (See page 101.)
21. What is the speed of light in air? (See page 101.)

The Never-Dying Light

By J. LEWIS BURTT, B.Sc.

This is a story with a definite moral and yet with science and adventure enough in it to make it thoroughly readable and enjoyable. It gives rather a new aspect of interstellar navigation.

"YOUR mail, sir," my landlady remarked as she laid a package and a couple of letters at my elbow.

She paused a moment. Then, "Another one come back, sir?" she queried anxiously, no doubt connecting my returned manuscripts with her arrears of rent.

I glanced idly at the package.

"I guess so. Looks like—Oh!"

Then I stopped and took another look at the package and changed my verdict, for the postmark was "Asuncion" and I'd certainly never sent any manuscripts to that remote part of South America.

Interested now, I was about to pick up the parcel when I noticed that one of the letters bore the same postmark. I opened it and read,

El Gran Chaco,
via Asuncion,
August 21st, 1933.

"My very dear sir,

You will no doubt grant me pardon for my so poor English, for I have but little of that tongue.

The cause of my to you writing is to tell that at the same time with this letter comes to you a writing, what you I think call a manuscript, which was to me given by the Señor Colonel Maybright for to be sent to you.

It may be that you will be of interest to know how come I meet with the Señor Colonel and just how come he is arrived to die in my arms."

So poor old "Maybe" was gone at last! Had his five years of silence been a fruitful five years, or had he returned to civilization only to die a disappointed man I wondered. No doubt the letter would tell.

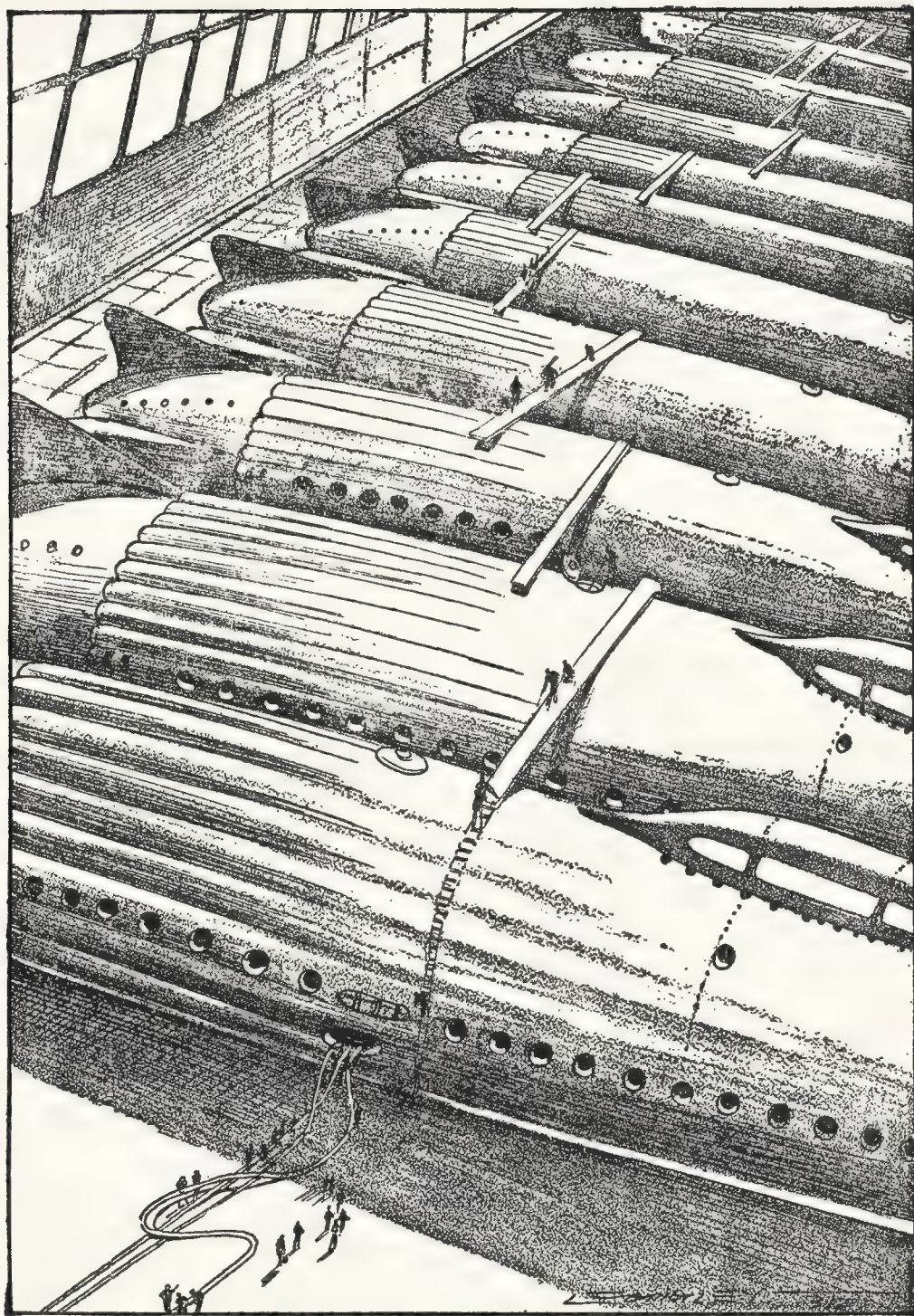
I resumed my reading:

"Since a month my native peon comes back to my humble abode one night, bearing on his back the body of a man not conscious, one marked with scars of many numbers of wounds, with the face pulled into lines of more than much suffering.

We laid him on my bed and tried to do for him such services as one should do to the afflicted.

The morning came and he awakened, but the mind of him was no longer there. What hells he had been through I did never find, but he made many ravings of great torments, of lights that never ceased to shine (We have, as you may know, Señor, legend stories of a such light far away inside the land). He raved of stars, of beginnings, of—ah! Señor, what use to repeat his mad-nesses?

I did the little for him that I could, but too far gone was he to save. He lives, after he brings himself to me, for ten days. At the end his mind comes to him again, and before he dies—may God his soul give to peace—he says to me that I give to you his writings. He says that, you his only friend are. He again says, 'Tell Lewis—all of it true—give to the world.' I promise on the cross, and then he dies with much quietness and with the laugh of peace on his face."



They made an imposing spectacle, did those twenty-five long, lean greyhounds of space, each of them glistening from end to end of its thousand-yard length.

So he *did* find out something after all! He must have succeeded or he would never have died with a smile on his face, for such I took the old priest's "laugh of peace" to mean. The letter concluded,

"I have with faithfulness obeyed my promise to the Señor Colonel, and to you I have sent the writings, taking them to the bureau at Asuncion in my own hand.

Pray with me, Señor, for the peace of the much tried soul of our friend the Señor Colonel.

With most true felicitations,
Your very humble servant,
Aloysius di Cavalho, S.J.
Priest of El Gran Chaco
Paraguay.

I put down the letter, sad at heart for the loss of my old friend, yet somehow that sadness was mingled with the joy of knowing that he had succeeded in his life's quest, for of that I felt quite certain.

I turned to the package, opened it and discovered a pile of manuscript in "Maybe's" familiar, almost indecipherable scrawl, a manuscript written on some kind of fine parchment instead of paper.

On the top was a letter which read:

"Dear Old Son,

I hate the idea that I'll never see you again, at least not on this old earth, but I know I cannot last out long enough to get back to Canada.

I have proved my theory of the origin of the human race, but the proof has cost me my life. I found the 'never-dying light' of which so many native legends tell, but that light has destroyed me.

Its location I will not set down even to you, for the time is not yet. In some far-distant future, mankind will be ready to unlock its wondrous secrets and to use wisely the powers locked within that vast temple of radiant energy. At present it would be a curse to the world, for

such power needs to be controlled by greater wisdom than that of our twentieth century world.

So let it lie for generations yet to come and, with the so-called savage, yet really wise, Indians, shun it, as accursed of the gods—for accursed it will surely be if its power is not wisely used.

I am sending you a manuscript written in my moments of sanity. It is a translation of the record left by those of old time. Their record is inscribed on metal tablets, which are still in their place in the 'Temple of the Undying Light.' Its reading cost me my life, for no man can endure so much radiant energy without protection.

Of my adventures while on the quest, of my capture by hostile tribes, of the torments I suffered as punishment for desecrating their sacred 'Temple of the Undying Light' by approaching its mystic holiness, I have no strength left to tell, though surely the tale would be a very epic in itself.

Good-bye, old Son, give the truth to the world. They will scoff or call it fiction now, but some day they will know. I

I cannot write more. I am very near the end and I *must* get out with the record. I've had five years of unutterable hell, but what matters that now—I've won!

So long, old Son,
Maybe.

Here then is the record. To him who discovered it be the credit. Of its truth I, its humble scribe, have no shadow of doubt. You who read, believe if you can, but, if not, at the least do not scoff, for, fact or fiction, it cost one brave man his life.

* * *

Here commences the record of the Great Salvation, written at the express command of the Great Leader, Adman-Kar himself, by the hand of Thot-Nubis, the recorder.

It was in the time of our greatest prosperity, and of our most wonderful advance in civilization and in the knowl-

edge of the sciences, that the judgment fell upon our beautiful world of Parydis. Let men call it a natural phenomenon if they will, we who survive know well that it was no chance happening, for had we not received many a warning that our wickedness, or pride of power, our gross materialism, must bring us to the inevitable catastrophe?

The first warning was given in the year 57,093 (i.e. according to the old records dating from the first formation of the world-empire of Parydis). A young astronomer, working in one of the gigantic extra-atmospheric observatories, noticed a slight dimming of the stars in the direction of our sun's motion. Most of the older observers, such being always the way of men of science, scoffed at the report as an optical illusion, but the young man stuck to his statement and, furthermore, added his contention that the phenomenon was due to a nebulosity which was drifting between our sun and these other stars.

This contention was soon proved to be correct, and the older men, being defeated in their scepticism, now shifted their ground to the attitude of, "Well, what of it? It's of no consequence whatever—merely a passing phenomenon."

But again they had to change their views. Within a year it was discovered that the nebula was of vastly greater extent than had been supposed, and not only so, but that it was increasing very definitely in volume, mass, and density.

By this time the scientists of the world were becoming distinctly worried. Here was the definite formation of a tremendous mass of matter out of nothingness, a condition which, according to their teachings, was absolutely impossible. And yet it was! There was no doubt about it. Neither was there any doubt that our sun, with all of his attendant planets, must meet and pass through the very centre of the ever-grow-

ing mass, with what result none could say.

These few of us who still clung to our belief in an intelligent Deity, a supreme Judge of all Creation, saw the phenomenon as the "finger of God," as the means being prepared for the destruction of a godless world. However that may be, you who in future ages read this record may judge for yourselves. My duty is merely to record the events as they appeared to us of the "Faithful" who were saved.

The astronomers fixed twenty years hence as the time of the sun's entry into the nebula—twenty years in which to figure out the probable results of the collision and to find means of minimizing, if possible, any bad effects it might have upon humanity.

It sounded simple enough. Our scientists had many a time boasted that no problem could be found that they could not eventually solve. Yet somehow they didn't seem to have much success with this one.

One great trouble among them was that they could not agree among themselves as to what would result from the contact. One school said that nothing would happen at all except some very fine, meteoric displays extending over a period of months. Another school bade us prepare for an ice-age, arguing that, when our solar system entered the cloud, there would be a great diminution in the amount of energy received from the sun. A third group predicted intense electrical storms accompanied by terrible floods, contending that the nebula was of a watery nature and would condense upon our worlds. Still a fourth group bade us prepare for certain and terrible death. The contact, they assured us, would result in such a bombardment of our sun by the nebulous gases that the result would be a tremendous increase in the surface heat of that luminary. In

other words, our star was about to become what is commonly termed a "nova," or new star.

We were familiar with such phenomena, for our astronomers had observed hundreds of these novae, stars which would blaze out suddenly into intense brilliance for a short time, afterwards dying down again and becoming "planetary nebulae" (or in some cases what are called Wolf-Rayet stars?—May-bright)*

Such a result would indeed be a calamity, for the increased solar heat would be sufficient to burn up all life from off the planets.

Discussions raged almost continuously for more than ten years. In the meantime the nebula continued to increase, and our solar system to draw nearer and nearer to it.

We who believed it to be the Judgment Day were already preparing for the end of our present existence, even in the face of a world's scorn and opposition. To us it was now quite obvious that a destruction by fire was about to overtake our system, and all our energies were directed towards the discovery of a way of escape, so that some at least might survive.

By the year 57,108—fifteen years after the first warning—the 'nova' theory had become almost universally accepted among the scientists, but so far no practical suggestion for saving the race had eventuated.

By now the nebula was distinctly visible at certain seasons of the year, as a distinct haziness in the sky on clear, dark nights. In cloudy weather, or when it was above the horizon during daylight, it was, of course, invisible. Yet somehow we always seemed to be conscious of its

ominous presence, and a sense of gloom and of impending disaster pervaded all Parydis.

A movement was started by a group of optimistically inclined "experts" for a wholesale migration to the outermost planet, where they believed the increased heat would be endurable, and where they hoped to survive.

This movement was joined by countless thousands, including many of the "Faithful," who believed that this was the Way of Salvation referred to in our ancient prophecies. So rapidly did this movement develop that by 57,110 nearly half the population of Parydis had crossed the void to that cold outer world of Shehalo.

Still there were a few of us—perhaps a thousand in all—who remained firm in our conviction that the old prophecies were true and that not only Parydis but our whole system must perish unless some miracle of universal repentance should occur to avert the imminent doom.

Quietly, unostentatiously, yet without any effort at secrecy, we went about our daily business, carrying on as best we might among the disturbed conditions of life. This was less difficult than might be supposed for, after the great migration to Shehalo was completed, the rest of the Parydians settled back into their old ways of life, ignoring almost entirely the dread menace of the nebula. Thus easily does familiarity even with great danger breed contempt for it.

So far not one of us had been able to discover any possible solution to our problem. Seventeen years had gone by since the first warning sign had appeared, seventeen years of faithful adherence to our belief, seventeen years of constant searching of the sacred books, yet seventeen years of utter strivings without result.

Only three short years were left—years nearly a fifth shorter than those of this

* A remarkable class of stars, white or yellowish, and only about 100 in number; observed spectroscopically by M.M. Wolf & Rayet, Paris, 1867. Their spectrum contains many yellow and blue bands, indicating hydrogen, and helium, perhaps in process of formation.

strange world of our adoption—in which to complete our work. Yet we were not discouraged. The conviction grew that some would yet be saved, that some would assuredly survive to carry on the race.

This conviction had become so absolutely a part of ourselves that not even the long years of failure could shake our faith, not even the jeers and persecutions of our world could daunt us. We *knew*, knew beyond any doubting.

Among our little group were one or two men of science, men who now spent their whole time in working for a solution of the great problem.

It was in the early part of 57,110 that one of these men, the "kar" or professor Adman, gave us the first gleam of encouragement. One evening he called us all together in our temple and acquainted us with the inspiring news.

"There is," he told us, "a not too distant star whose motions my son Canin and I have been observing with interest for some time.

"We are now practically certain that this star is the parent of a series of planets. Its perturbations during the past three years seem to point to this condition, though naturally we cannot get sufficient data for real proof.

"Now, friend, in spite of the uncertainty of our observations and calculations, I have a definite inner conviction that there lies the Way of Salvation. I feel inspired to urge on you the following course.

"Let us build a fleet of space-vessels, larger than any that have ever been constructed on Parydis, equip them with every necessity, and as much else of the best things of the world as we possibly can. Let us prepare to set forth in them, trusting to the All Merciful to guide us safely through the fearsome void, and bring us at last to another

world, where we may build up a new civilization on a better and a saner foundation."

He ceased. For some time no one spoke. Interplanetary flight we had long been used to, but the idea, of this tremendous flight through the unimaginable distances of outer space, was too immense for our minds to grasp all at once.

Then the storm of questions broke.

"How far off was this star?" "How hot was it?" "Was it not also in possible danger from the nebula?"—questions by the hundred.

When the excitement finally died down, we summed up the situation this way:

The first magnitude star known as the "Wolf Star" gave indications of the presence of a planet or planets whose size might be anything from a thousand to fifty-thousand miles in diameter (Our own Parydis had a diameter of about 10,000 miles). There were probably several, each in its own orbit, so that there was a distinct possibility that one at least might be found habitable.

The star was distant about eight light-years (calculated as nearly as possible into earth measurement—Maybright)*, and might possibly be reached within about two hundred years of Paradian time, i.e. in about a third of a lifetime, if all went well.

The question now before us was to decide whether this was the prophecied way or whether there was not some better plan which had not yet been revealed. On this point Adman and Canin were not in agreement. Adman argued for it on the grounds of its possibility and of his own inward convictions. He constantly affirmed the words of the prophecies that the race should dwell in a "new world."

* The distance light would travel in a year; in a second light travels 186,600 miles, which is a light second.

Canin, on the contrary, contended that the journey was not possible, not even with greatly improved space-ships. He had, he said, no inner convictions on the point, but argued solely from the viewpoint of the impracticability of the project and from the evidence of observed facts. He admitted the insistence of the prophecies concerning the "new world," but maintained that the term was used figuratively in the meaning of a new and righteous social order.

The discussion waxed hot through a series of special meetings lasting in all some four days. In the end we decided that we should go forward with preparations for this great flight, at least until something occurred to indicate a better plan, but that we should not actually embark until the last possible moment.

SO another year and a half passed by. The great ships were all ready, though not yet loaded. They made an imposing spectacle did those twenty-five long, lean greyhounds of space, each of them glistening from end to end of its thousand yard length.

The regular liners, with their dull aluminoid casings, looked very drab against our gold-plated fleet—gold-plated not so much for appearance as for resistance to surface disintegration, for, strange as it may seem, the otherwise useless gold was now found to be by far the most resistant of all metals to the destructive effects of spatial cold. The discovery, by the way, was due to an accidental result of one of the experiments performed by Canin's younger brother, Bel.

I mention the incident chiefly because it was the beginning of the jealousy that eventually caused Canin to come to hate, and finally to kill his younger brother, an incident deplorable enough in itself, but still more tragic in its results to humanity. But of that

later. We must go on with our story.

During this period, those of our brethren who could be spared from the work of construction and preparation, devoted their time to attempting to convince the rest of the world of the urgency of their danger. They did persuade a few, but humanity, as always, preferred their own opinions and obstinacies, so that, when we did finally leave, there were fewer than two thousand souls all told.

THE nebula was getting very close now. The stars over an area of about fifty degrees in diameter were distinctly hazy. The nebula itself did shine, but only very faintly, probably only by reflected light from our sun.

Calculations showed that the outer fringe of it would contact the sun in about eighty days more, reaching Parydis, which would be towards the side remote from the sun, about twenty days later (our orbit was about 100 million miles in radius, and the relative speed of approach was roughly forty miles a second).

If, as we supposed, the contact should result in a thousand-fold increase in the sun's surface radiation, we needed to get away almost at once, for it was essential for us to be at least a thousand million miles away at the time of maximum brilliance. At a maximum acceleration of forty feet per second this distance would require about sixty days, at the end of which time we should be travelling at about four thousand miles a second. In other words we needed to get started without about thirty days in order to have a little leeway.

No other solution had been proposed even by the recalcitrant Canin, and by now we were all thoroughly convinced that we had read the prophecies and the astronomical signs correctly.

As soon as the final preparations for

departure began, we dropped all efforts to persuade others to accompany us. It was too late now. Their chance for salvation had passed. Our ships had their full complement of passengers, and there was no time to build more—our original twenty-five had already increased to forty-two.

Even though all plans had been carefully drawn up, yet we should need all those thirty days for final preparations. There were small mountains of food supplies to be stored, innumerable carloads of blocks of ice to be packed into the outer shells and storage tanks.

Supplying of food and water, and fuel, for two thousand people, even for a few months, is a considerable undertaking. We must prepare for the longest time we possibly could. At the least we calculated that it would take us sixty or seventy years (not two hundred as we had originally estimated) to reach our assumed destination, for the Wolf-Rayet star was at least eight light years distant, and our maximum speed could not exceed about one eighth that of light (too much relativity-strain if we exceeded that, we calculated).

Before commencing this part of our labour, Adman, who had become one of our leading advisers, called the assembly together and said:

"Friends and true believers. So far we have worked together in harmony and good fellowship, working in groups, each of which has taken its own part in the preparations. Now, however, it seems to me that we should be banded into a single organization, with a leader having the powers of a commander-in-chief.

"You are well aware of the dangers attendant on spatial navigation, you know the demoralizing effects of the long, dragging monotonies of the void. To me it seems that our protection from the evil effects of these conditions lies

only in a rigid, yet beneficent, discipline, absolutely enforceable by commanders who are themselves under the direction of a single dictator.

"In short, though we are organized for peaceable ends, methinks that we should be disciplined and organized as though for war. What say you, friends?"

The idea was so reasonable that it was adopted without question. Neither was there any discussion as to our choice of leader. With one accord we acclaimed Adman himself as our commander, placing ourselves under his authority, voluntarily yet irrevocably, for good or ill.

NOW the real thrill of the adventure began to make itself felt among us. Until we actually commenced the loading of the ships, I don't think any of us had really grasped the fact that we were to leave our beautiful, wonderful Parydis for ever.

The loading went on apace despite the secrecy we now felt it wise to preserve—we were afraid of starting a panic if it became known that our departure was so imminent, and we had no desire to be murdered by any angry mob trying to steal our ships.

The first real intimation of the magnitude of the catastrophe came about three days before we were ready to leave. The outer planet, Shehalo, was at this time on the side of the sun nearest the nebula, which was now almost touching Shehalo's orbit. Parydis was, as I have said, almost in quadrature, so that Shehalo was visible for some hours after sunset.

On this particular evening Bel called through to all the ships, in which we were now living for protection against possible riots, and invited us to watch the planet through our telescopic screens.

"You should see some very interesting phenomena," he told us, "It is certain that the outer fringes of the nebula con-

tain a great deal of hydrogen. When they begin to penetrate the atmosphere of Shehalo anything may happen."

Here was a factor that, for some inexplicable reason, had not been given any particular thought. Certainly those who moved to Shehalo in the great migration could not have considered the possibilities of such a contact between an oxygen-laden atmosphere and a sweeping mass of hydrogen.

Bel's words brought home to us something of the hideous drama that was about to be enacted, and, fascinated, we all sat in the observation rooms, our eyes glued to the screens.

There, in full view, was the little silvery disk of Shehalo, racing steadily across the sky. We held it in the centre of the screen and watched as the stars crept slowly forward across the magic sheet.

Along the extreme forward edge appeared the first haziness. With slow but inexorable grandeur the nebula swept on.

Five minutes passed—ten minutes—the contact was very near now.

They touched.

For a long minute nothing happened. Then—

I think we all started back with a cry of horror as the atmosphere of our sister world, the refuge of millions of our race, blazed out in a flaming hell of fire.

For a moment it seemed as though Shehalo had become a world of glowing fire, a ball of red-hot radiance. Then, as the nebula swept on, it caught up with it a part of that blazing atmosphere.

Out towards us shot a fiery tongue of bluish flame. Like a burnished sword it hung quivering in space, looking for all the world as though about to plunge straight into our own little globe.

Amazed and horror-struck we sat, until, at last, our great Leader muttered,

"The Sword of the Lord!"

Then in a choking voice he said piously,

"God is merciful. Their end was swift."

HOW long we sat in horror-stricken silence I know not. All I remember was that day had come before anyone made a move. We had witnessed a calamity such as occurs once only in milleniums, the destruction of a world, and the realization of its stupendousness was more than human minds could carry.

It was certain that we must leave at once. If such was the effect on a planet, what must be the result when the sun itself was struck? Those unfortunates remaining on Parydis would not long remain passive now. Unless we got away very soon we should have no chance, for well we knew the madness of panic that would cause us to be mobbed by raging, fighting thousands. Well we knew that in their madness of despair they would not let *us* escape if they themselves could not.

Only just in time did we set out. Even as the dawn broke on the fateful morning, we saw approaching our barriers a mass of raving, crazed humanity. Within a few minutes they would be on us.

Now our organization, our choice of commander, proved its value. Without hesitation, without even stopping to change from his night attire, Adman stepped to the master visophone.

One order he gave.

"Stations for flight. All ships prime motors."

So well planned had each detail been that less than thirty seconds elapsed before the slowest of the captains had replied.

"All ready and sealed, sir."

Yet, even so, the barriers had gone

down. Before the next order could be voiced, a howling mob was already bashing at several of the ships with the frenzy of despair, using axes, hammers, everything they could lay their maddened hands on.

The next order came, still in the same unperturbed voice.

"Prepare to take flight, regular formation."

But even so a full minute more must elapse before those gigantic tubes could blast forth their energies. That was the one thing that could not be hurried. Those rocket-motors *must* have their full hundred seconds to pre-heat if they were to function properly without burning out.

The clang of sledge-hammers, the crack of rifle shots, the rasp of chain-saws, sounded loud and threatening against the gilded sides of the ships.

Would their armor stand the terrific pounding? Would those tempered, lookout windows crack under the blows? One break and one alone would be enough to disable a ship for space flight. True, it could still rise into the upper air and effect repairs there, but in such case our attackers would be almost certain to train the great aerial guns on us, and then—

I don't know how the rest felt, but I must confess that for a moment or two my faith wavered. What if, after all, we were not to be saved? Would that interminable hundred seconds never end?

With the suddenness of a typhoon the tension was burst by a howling roar. At last one of the tubes was firing!

Now, almost more quickly than we could count, roar after roar signalled the firing of more and more tubes.

The scene outside was ghastly. The rush of flame from the rockets had caught hundreds in its blast. Hundreds more were sucked into the hellish stream and shot through like leaves blown by a

fan. Yet, horrible as was our take off, the terror was but momentary, for just as the last tube caught, Adman, standing there with the calm of perfect control, gave his third order.

"Take off!"

Instantly the roar of the rockets rose to a howling, piercing shriek. An immense hand seemed to press us downward and backward. We were off!

FOR over sixty eventless days we pressed steadily on, flying with smooth, effortless (or so it seemed to us in the ships) acceleration. Yet the days were by no means monotonous. Adman and his staff had most wisely arranged the duties of the company so that everyone had a reasonable amount of occupation. There were look-outs to be kept, observations and calculations to be made, domestic and social duties to be carried out, the little ones to be amused, educated, and cared for. There were plans to be drawn up for the long, long years ahead of us, plans which must include training for our life of the future, training which must fit us to meet and overcome obstacles and dangers of every imaginable description, for who could say just what conditions we must be prepared to meet.

Neither was amusement and entertainment to be neglected. All these things must be planned for, if our expedition was to prove successful, and if we were to survive the journey without becoming oppressed by our confinement, if we were, in fact, to avoid the boredom and monotony that would perforce end in chaos and madness.

No, these first days of adjustment gave us no time for speculation or repining. I think Adman so arranged things of deliberate intent, though at the time it appeared otherwise. Perhaps, even now, we do not realize the full extent of his kindly wisdom.

On our sixty-third day out (we kept Parydian time throughout all our long wanderings) we were called by the young operator Anark, the son of Canin, who was on observation in the lead ship, and told that the first outlying streamers of the nebula were about to contact the sun.

Although we were by this time some 1200 million miles out, having made rather better acceleration than we expected, yet on the warning being given, Adman gave orders for all to take "danger stations."

I HAVE tried and tried to write a description of that marvelous yet terrible contact, that flaming death of a solar system, and yet I cannot do it. I have asked a score of our most gifted scribes to write it for me, but without avail. Such things may not be described by the pen of man, though every awful detail may be burned indelibly into his memory.

How may one begin to picture the blazing out of the sun's great corona, how speak of the wondrous series of changes that, within a few short hours, raised the little orange disk of the distant sun to a huge, scintillating ball of blue-white glory, as the outer layers of the star expanded into magnificent incandescence. How may one describe the oppression, the wave of fear and dread that swept over us as the blasts of radiance, striking like veritable missiles, heated up the shells of our golden vessels.

Truly were we 'escaped by the skin of our teeth', as one of our number put it. For days we endured a stifling heat, a radiance that seemed to penetrate even the thick metal shells of the ships, for while we were only a dozen times our former distance from the sun, that sun had blazed out into a splendour ten-thousand-fold more magnificent in his death than he had been in his life.

So terrible was this period that the actual destruction of our own Parydis passed almost unheeded save by the official observers. Yet, by the mercy of God, we were able to endure, and gradually yet steadily, as we fled away from that scene of destruction,, conditions adjusted themselves, and before long we were making full use of our rocket-exhaust heaters to combat the appalling frigidity of outer space itself.

Of our long journey to the 'Wolf-Rayet star' I need not write. Such incidents as did occur were of no importance and of no interest to posterity—just the expected adventures of space-travelling.

We had approached within about a fifth of a light-year of the magnificent star when Bel, who, to Canin's disgust, had proved himself the best of all our astronomers, voiced the first doubt.

"I am afraid" he told us of the council, "that the 'Wolf-Rayet star' is not our destined home, and that our journey must continue for many years yet."

"Why?" I asked impulsively, for like most of the rest, I had been full of plans for our debarkation.

"Just because I cannot find those planets we thought were there." he answered quietly.

"What!" came the exclamation from a dozen throats.

"As I said," he replied calmly, "the perturbations of the star's movement are not due to planets. They are entirely accounted for by the pull of its little companion star. Look!"

He swung the telescope on to the screen.

Yes, there beside the 'Wolf', as we called it, was a tiny white speck, a little sun, one of those strange, dwarf suns, white-hot, incredibly dense, and most certainly *not* habitable. And that was all!

The faces of my companions, and I doubt not my own as well, showed a mixture of emotions, faith struggling with bitter disappointment. Canin looked blackly at his brother, as though the disappointment had been Bel's fault. Yet, as a matter of fact, it had been Canin's own observations that had led us to this very star.

Adman, as always unshaken in his confidence and serenity, said quietly,

"Children, do not let one disappointment daunt your faith. What matters it if we have to journey on for a few years more? Have we not provision for a full five-hundred years? Has not our God protected us throughout these seventy years?"

Then, turning to Bel, he said,

"Go on, son. Tell us more."

Bel smiled that slow, sweet smile of his.

"Your faith, my father, is justified I truly believe. Our journey to the 'Wolf-star' has not been in vain, even though we may not stay here. To me it shows very clearly the wondrous guidance of our God as shown to us by my brother "(Bel ever tried to calm and placate that fierce jealousy of his brother)" for now that we have come so far, the next part of our journey is made clear before us.

"Away beyond the 'Wolf' lies another sun, a smaller, cooler star, more like our own lost sun. From Parydis this sun appeared as an unimportant and uninteresting star, which showed no reason why we should study it.

"From our present position its motions may be observed with more accuracy and, friends—" he hesitated a long moment, then quite slowly continued, "its motions have almost convinced me that it, and not the 'Wolf' is our future home."

A babel of questioning broke out, but with a little gesture he stilled it.

"No, I cannot *prove* the existence of

planets. I only expect it, but even as my father *knew* within himself that ours was the right course, so now I too feel within me the same conviction."

He shifted the screen slightly.

"There," he said dramatically, pointing to a tiny point of pale light, "there lies our future home!"

It seemed obvious enough that this was the only possible course to pursue, yet Canin, I suppose because the suggestion had come from Bel, negated it. He offered as a counter proposal that we turn back and attempt to re-settle our old world of Parydis. There was some little discussion but it soon died out for, as Adman pointed out, although our old sun had lost most of its temporary brilliance, yet it was still much hotter than before the catastrophe. He pointed out, too, that the terrific scorching that Parydis had undergone must at the very least have destroyed every vestige of cultivated soil, even if it had not completely destroyed both oceans and atmosphere. In any event some millions of years must elapse before there could be any possibility of life existing again on Parydis.

So Canin's proposal came to nothing, but its effect on the man himself was, unfortunately, less innocuous, for each incident of this sort seemed to add fuel to his now flaming jealousy.

To say that we were not disappointed would be a lie, but after all it was hardly to be expected that our first objective, out of the many thousands of possible worlds, should prove suitable.

After all, our years of traveling had not been unhappy ones. We had found occupation and interest enough for all. Many of our children had known no other life, and, I fancy, were almost pleased that the life to which they had always been accustomed was to continue for a while yet. Only a few of the old ones seemed a little sad for a time. One

could understand their thoughts. After all it would have been pleasant for them to set foot once more on a habitable world before their span of human life should be completed.

So we altered our course, sweeping past the magnificent 'Wolf-star' at a distance of many light-days, and heading straight for the little pale star that already we had begun to call "our sun".

The journey was without incident, so much so that we often used to laugh about the old fiction tales in which the terrors and dangers of interstellar traveling were depicted so dramatically.

No, space traveling, once out of the local zone of meteoric stones surrounding a sun, is so safe that in the whole century and more of our wanderings, never once was a single ship in danger. With plenty of food and fuel the only danger lies in the mental effect of the monotony, and even that, as we proved, can be fully guarded against in a well-organized expedition of sufficient size, though no doubt it would be a serious matter in the case of a single, lone ship.

We commenced to decelerate a full year before we reached our new sun. For once Canin and Bel were in agreement. Neither they nor anyone else saw any sense in tearing up to our new home, if such it should prove to be, at twenty-thousand miles a second, and then straining ourselves and our ship to the limit by attempting to stop within a couple of weeks.

It was now certain that this sun had at least four planets, but it was not so certain that they were habitable. All four were very massive and very distant from their sun. Certainly none of them would be possible homes for us.

It seemed very probable, however, that there must be other and smaller planets, as well as satellites. For one thing the largest of the visible planets was the innermost one, and also its orbital radius

seemed to be too great for it to be actually the nearest to the parent sun.

The observers became keener and keener as we approached. The rivalry among them for the first discovery of a smaller world was intense, though always friendly.

Four months from the beginning of the deceleration the first of the smaller worlds was seen. Then in rapid succession came the discovery of three others. All four of these worlds were reasonably close to the sun, and all four were smaller than Parydis. Surely at least one of them would be habitable.

Adman, who still retained his ability and vigor, despite his six-hundred and eighty years, gave orders that we should visit each planet in turn and make a careful survey before coming to any decision as to settlement.

The fourth planet, being on the side of the sun nearest to us, was visited first. A strange little world it seemed to us. Scarcely more than one third the size of our lost Parydis it was, yet its distance from its sun made its habitability seem probable.

But no. On closer inspection it proved to be an arid, dried-out globe with neither oceans or rivers. Some traces of vegetation there were and so we drifted closer and twice circumnavigated it before we managed to tear ourselves away.

For, though it was certainly not habitable now, yet we were fascinated by the unmistakable evidence of a former settlement by an advanced race of beings.

Had they been men like ourselves? Had they been grotesque monsters? Had they perchance been angelic in appearance? We cannot say. All we could tell was that they had been highly civilized and that they must have put up a heroic and age-long fight against the ever-encroaching drought—the traces of their remarkable irrigation system proved that.

What had been their ultimate fate? Had they, at last, perished utterly of drought? Or had a remnant escaped, even as we had done, to rebuild their civilization on some far-distant planet? Who knows?

We liked to think that some did survive to find for themselves a new and happier world, and so we named the little desert-world 'Manaar', "the Abandoned".

We did not make any close inspection of the innermost planet. Our telescopes showed plainly enough that it was nothing but a ball of heat-riven rocks, waterless, airless, and utterly lifeless. So we passed by, leaving to its solitude that little world that we could not resist naming 'Abfar', 'The Scorched'.

The next planet, the second from the sun, showed more promise. That it had an atmosphere and plenty of water was certain, for, long before we reached it, we could see the rolling cloud masses that hid its surface.

Cautiously, yet hopefully, we plunged beneath those misty veils. Thousands on thousands of feet thick they were, unbroken, dense, and gloomy beyond words. Beneath them we found a misty, dreary world, a world of swamp, hideous reptiles, of giant fungoid growths. A sense of horror and depression held us all the time we staid below that massy cloud cap. Not one of us but dreaded, with a great and heartfelt dread, the thought that perhaps this must be our home. Nevertheless Adman, wise as usual, insisted on a careful survey, careful test of the atmosphere, of the waters, and of the quality of such light as did manage to filter through the fogs and clouds.

The final report was both cheering and depressing. We *could* live on this world, but conditions would be difficult in the extreme, and perhaps several generations must pass before our descendents could

expect to adapt themselves wholly to the all-pervading dampness, to the lack of light, and to the low oxygen content of the atmosphere.

At the worst we now knew that we had found some kind of a refuge. At best we might hope for better conditions on the last of the four worlds.

And our hopes and faith were fully justified, for even as we approached that other world, we felt that we *wanted* to live there.

What a contrast to that gloomy planet—'Nodar', 'The Oppressive', as we named it—that we had just visited! Here was a world, not so very much smaller than our beloved Parydis, neither too near the sun nor too far distant from it. It seemed to be a world of beauty, of happy sunshine, tempered with cooling clouds and rain, a world of great continents scattered among deep oceans, a world in which we could pick and choose our dwelling places, until each had found the conditions that pleased him most.

As we sailed gently down through the atmosphere, our first impressions were more than confirmed. Oh, the joy of seeing again a bright *blue* sky, of gazing on the wondrous colours of a sunrise, seen through the many miles of atmosphere! The younger ones, those who had forgotten or who had never seen our lost Parydis, could scarcely contain themselves for rapture at these beauties, and call on call came through from the ships, begging Adman to let us live there.

His one reply to all these importunities was,

"Patience, children, patience yet a little while."

And patient we had to be, until every test of atmosphere, water, and light had been carefully verified.

Then came the eagerly awaited verdict.

"All is well, friends. This world is in every way suitable. On it we may live

and be happy. Conditions are even more desirable than they were on Parydis.

"Let us praise God for our deliverance, and in so doing remember humbly that though this world that He has given to us is a heavenly place, yet we, if we follow the follies of our lost brethren, may still make it into a veritable hell of misery.

"So, as you give thanks, pray also that such evil may not come among us."

Was this warning prophetic, I wonder? In the light of subsequent events it seems so.

Of our settlement in our new world, which already we had named 'Ahrets', or 'Home', I need not write. For full fifty years we worked and builded in happiness and harmony. All save for the growing sombreness and bitterness of that strange man, Canin.

Adman, by this time an old man, though still retaining his full strength and mental power, felt that he should pass over the reins of government to one of fewer years. He called us all together and asked us to choose his successor. But this we would not do. To him, who for these many, many years had led us so wisely and so courageously, must go the honour of appointing his own successor.

The old patriarch seemed reluctant to name one to follow him, but at last, and with evident effort, he spoke.

"Friends and faithful followers, you have given me a hard task. There are many into whose hands I should like to give the control. There is, for instance, my eldest son, Canin; there is Bel, his brother; there is Thot-Nubis, who has so loyally stood by my side; there is Kherab, our wise and learned instructor; there is—oh! there are so many others that I could name. But to one only may I give the honour, and that one must be the most worthy of all, selected without fear or favour. Therefore, I name as my

successor in office as Guide and Ruler of the people of Ahrets, my second son, Bel."

Any further speech was cut off by a storm of applause, unanimous and enthusiastic, save from Canin and a little group who surrounded him. Adman looked across at them, made as if to speak, then, with a little sigh, turned his eyes from them without uttering a single word.

So the mischief that had been dormant so long came to a head. Scarcely had Bel taken over the government than Canin and his group of malcontents began to make trouble.

An open break was soon seen to be inevitable. Not only did Canin defy his brother's authority, but he actually went so far as to deny that our Salvation from the destruction of Parydis had been the result of Divine Guidance in any way. Soon he got to the point of rejecting the true God altogether, and he and his followers swiftly sank into a materialism that was even more gross than that of the ones we mourned as lost.

Open rebellion, of course, soon followed. Perhaps this in itself would not have been so fatal had it not been for the foul treachery of this evil-hearted man.

Bel, when Canin openly rose against him, went out to meet his brother. With his usual kindness he invited Canin to talk matters over, and together and apparently in friendship, they walked out from the city along towards the open field.

But no sooner had they passed the city wall than, leaning suddenly over to his brother, Canin plunged a dagger into the very heart of the unarmed Bel.

At this, obviously pre-arranged, signal Canin's followers attacked.

The rebellion was soon crushed and the fratricide taken. Adman, re-assuming office as supreme judge,

banished Canin and his followers to the distant world of Nodar, giving no heed to the murderer's hypocritical protestations of repentance.

Still the mischief was done. Adman did not long survive this bitter blow, and after his death the disintegration, whose seeds had been sown, went on apace. apace.

Now, less than two centuries after our arrival on this so beautiful planet, I, the last of the "Faithful," with what strength remains to me, have the sad task of completing this record and, according to the word of the late beloved Leader, of placing it in this temple of undying radiance, that in the ages to come our descendants may find and read.

Read and mark carefully, you who in ages to come shall translate this record. The spirit of prophecy is upon me. I see mankind fallen to the level of the savage beasts, fallen through their own pride and arrogance, fallen to a life of few and miserable days. I see them through centuries and milleniums of sorrow and woe struggling upward, oftentimes falling back, yet at the last regaining much of their ancient power—but with what measure of true wisdom I cannot see.

I see, as the ages roll on, one who reaches and reads my record, I see him suffer the pains of death, for he knows not the secret of the radiance, nor where lies his safety.

Again, still more ages hence, I see men come again and find the record. This time they take and use it, take and use that power of which I alone of all men now know the secret.

It is that power that enabled us to make our age-long journey, that power that, with perfect control, can convert the very atoms of the material world into such stores of energy, as even we,

who use it, can scarce conceive or know.

You, who in the end are found worthy to use this mighty power, read with care, marking every detail, for otherwise, instead of a faithful servant, you will release a devouring monster.

(Here follows a detailed account of the manner of converting matter into energy, such energy as we of today do not even dream of. Myself, I do not pretend to understand it fully, though I have no doubt that even today those who have studied such problems might comprehend it.

I have deliberately refrained from transcribing this part of the record, and in this I am confident that I am guided by wisdom. Not yet may men safely know such secrets, not yet have they regained the honesty, the brotherly kindness, the wisdom that alone can warrant such a revelation.—Maybright.)

So I seal the record, placing it within the undying radiance that shall be a witness throughout all ages. Let this light shine forth for ever in the darkness of ignorance. Let this temple that I have builded stand a tribute of worship to the One True God, though in all the world there may be none other.

Thus shall God never be without His witness in the earth, until in the fulness of time mankind shall rise again to its original perfection of wisdom—or, perchance, unlock the power in evil intent and so destroy itself utterly and for ever.

Would that I could see the end, but this last vision is denied me.

Farewell, friends of the future ages. That you may find wisdom to use the power justly and well is the last dying prayer of the last of the "Faithful."

Thot-Nubis, the Recorder.

Liners of Time

By JOHN RUSSELL FEARN

Conclusion

We will bid good-bye to this rather exciting story, which now has seemed to leave the main characters in a critical position in a contest with Jelfel, which is the opening episode in Chapter XIX. Jelfel puts up a good defense and attack and the story tells how he fared. The escape of the earth and its people seems an impossibility. The reader must go through the concluding chapters to find what did become of our three characters and of the world at large. We think this story, when the last portion of it is read, will be greatly appreciated by our readers.

CHAPTER XIX

To the Death!

EVEN as Jelfel was speaking my mind was working at top speed. But Jelfel had more to say.

"To be sent to Ran, as my first subject, is a great honor, my friends. Your bodies will do better work than ever, when we have disposed of them. For Jovian brains, I believe that is your adjective for our mighty sphere, will inspire your earthly bodies to marvellous achievement. The brains of Jupiter, as you call it, and the bodies of earth will make a wonderful combination."

On the face of it the position was desperate enough, and yet . . . I had almost succeeded once by barbarous methods; perhaps this time I might manage it again successfully. I cannot explain to you why, with all the attributes of science about me, my super-mind always prompted me to methods of the brute. I can only think it is the force uppermost in Man that rises to the surface in an emergency.

So it was that I suddenly hooked out my left foot, as though by some agency other than my own nerves, and kicked Jelfel violently on the leg. Naturally, as the leg was artificial, he did not even wince, but beneath the force of my blow

the delicate metal jointing came apart at the knee, and presented the fantastic appearance of the lower half of his leg swinging in the embrace of his black tights. Instantly he dropped his likewise artificial hands to set to work to remedy the defect, then almost immediately remembered me.

But it was too late then. I was upon him, and bore him backwards to the floor. Both of us crashed over with the metal chair on top of us. He opened his mouth to shout for a guard but I clapped my hand across it. He lay still for a moment, looking up with those burning eyes of his.

"Once before, when I had you like this, I nearly killed you," I murmured. "I was a fool to have ever let you go. This time I shall not make the same mistake! I——"

I had no chance of finishing my sentence, for he suddenly heaved up his normal, short body with all his strength and rolled me from him. In an instant he had torn the ray-gun from his belt and levelled it full upon me. I lay in dazed terror, awaiting the inevitable. . . . But it never came. Elna suddenly jumped into activity, seized Jelfel's artificial hand with all her strength and pulled backwards mightily. She more than succeeded. The terrific wrench she



I saw a greenish glow spread about the area of her heart. Her skin started suddenly to glow, as though she were on fire.

gave ripped the false arm clean off Jelfel's short upper arm and three normal hands. She went toppling backwards to the floor, with the metal limb still held in a fierce clutch. She at least had the ray gun, and as she endeavoured to rise from the floor I flung myself forward to seize it. Jelfel did likewise, however, and our movement was simultaneous.

Elna was quicker than either of us as events transpired. For she tore it away from our clutching hands and hurled it to the far end of the great room.

For a moment there was silence. Then Jelfel suddenly commenced to tear off his artificial integuments, and presently we beheld him as he really was, with the trailing black remnants of his suit clinging about him like a skirt, draped about his oddly repulsive form.

He stood about two feet six, two powerful, incredibly short, unjointed arms (no elbow, that is to imply) each ending in the three tentaculate sets of hands, and no nails. The legs were not visible in the shrouds of the cloth but occasionally I did glimpse an insectile looking foot.

"Since you will be a barbarian, Commander, so will I," he said grimly. "I cannot call my guards—you are too wary for that. I cannot get at my instruments and reduce you to ash. Therefore, I will meet you on your own terms. So far you have fought with great courage for the good of your planet—I will grant you that much—but I have done likewise for mine. I warn you that you are now fighting Jelfel the Jovian, in all his natural strength, for the gravity of this little world appears slight, now that all those metal integuments have been removed. I am ready!"

And with the words he hurled himself at me. I was certainly not prepared for the terrific strength with which I

suddenly had to cope, or for his curious methods of fighting.

The three pairs of hands to each arm—six in all—were dangerous appendages to tackle. They were at my throat and vitals before I knew what was happening. I found myself flung to the metal floor, struggling desperately to free myself of this sudden two foot six of calculating, tigerish ferocity.

Once again it was Elna who saved me. She seized Jelfel's hair in both hands and pulled with all her power. So great was her muscular power, and so intense the pain, he was forced to release me, but I regretted it a moment later. Like some hideous dwarf, his face distorted with fury, he twisted himself out of her grip and flung himself upon her, banging her to the floor, and seizing her throat in a terrific grip. It was an insane and terrible clutch he had upon her. I knew in a moment from her desperately threshing legs and arms that he was choking the life out of her. With a hoarse cry I seized him by the shoulders; failing in removing him I rained blow after blow into his unprotected face, but he only shook himself and tightened his grip. Elna looked up at me with her eyes starting from her head, her face a ghastly, purplish red.

"Stop!" I shouted frantically, kicking and punching the devilish Jelfel with all the strength I could muster. "Stop, you fiend! You're killing her!" I emphasised every word with a blow to the face or repulsive body, but he still clung on, a deadly smile now curving his thin lips. Suddenly, as I watched in dazed horror, I saw Elna cease struggling. Her eyelids closed and her lips came together spasmodically. With a thud her head struck the metal floor as Jelfel suddenly released her. I stood rooted to the spot for a moment, my gaze chained to the brutal marks about the flesh of her neck.

"Elna!" I panted desperately, sweeping her up in my arms. "Elna! For God's sake! Elna! . . ." I clutched her, I shook her; then with a trembling hand I felt her heart. It had stopped!

"DEAD!" I groaned hoarsely, in a sudden abyss of despair. "Dead! Merciful heaven above! . . ." My voice rose up to the mighty roof and became silent.

Then abruptly I came to myself. I laid her back on the floor with reverent tenderness, and turned very slowly as I rose to my feet, my fingers distended, to behold Jelfel with a sardonic smile on his face, a few paces behind me. His tentacle hands were also ready for action, his whole mein repulsive and menacing.

"Elna Folson has gone—you are next," he muttered. "You would dare to stand in my way? You would presume to hinder my plans—and the plans of Rath Granod, the All-Wise?"

I stood quite still, rocking gently on my toes. I looked back at Elna's still form, face upwards to the brilliant arc-lights, then again at this devil incarnate from Jupiter. This devil had robbed me of the one creature in the world to whom I was devoted. . . . I don't quite know what happened to me then; something gave way somewhere in my being. I had been a strong man before, but now I was super-man—a Hercules, a muscled giant controlled only by deadly, vengeful hate.

I hurled myself at Jelfel with sudden abruptness, as though I were catapulted. I cannoned straight into him, bowled him over to the floor, and then picked him up, cursing and struggling, in my hands. I scarcely felt the sudden effort; I was in a blind, demoniacal rage. By nature I am a peaceable man, but if ever murder was in my heart it was in it then. The ruthless, inhuman slaughter of Elna had changed me completely; I felt an intense

and gloating satisfaction at finding Jelfel afraid. I saw it in his eyes.

I flung him to the floor again with devastating force, and somewhere a bone cracked within him—I fancy it was one of his wrist. He yelled for his guards, but only got half way because I struck him a terrific blow in the mouth that split his upper lip. He glared up at me like an animal and spat the blood from his mouth. I noted, too, that the blow had smashed three of his artificial teeth, and also gashed my knuckles pretty badly. Not that I particularly cared in the mood I was in.

"Get up, damn you!" I snarled fiercely. "Get up!"

Instead he made to scramble away, but I caught him up by one arm and whirled him aloft above my head. His body flew in a semicircle, crashed into a bank of glass jars and test-tubes on the nearby bench, and fell bleeding to the ground. He was cut, terribly cut, but still very much alive.

He was anything but a pleasant spectacle. Apart from his revolting form, the blood upon his face and limbs presented a most nauseating sight (it was slightly pinker than an Earthling's). Yet, somehow, the sight of his injuries filled me with intense happiness. He had murdered Elna—would murder the whole human race if he had his way—but not if I knew anything about it!

He scrambled to his feet as I went towards him again, and jumped upwards to clutch me with those frightful tentacles of his. I met him half-way with a mighty uppercut. It struck him clean on the jaw, a smashing, bone-splintering blow that sent him reeling backwards drunkenly, clutching frantically at the wires of his machines to save himself as he did so. At the breakages occasioned by his fall short circuits exploded and detonated from different parts of the great hall. Something in the next instru-

ment room went off with a din like a cannon.

Like a demon I was upon him. A glorious thought was in my head. I clutched him like a vice, whirled him up on to my shoulder, and marched at full speed towards the stairs of the observation tower. I wrenched the door open and hurled him to the staircase.

"Get up there!" I thundered.

"You—" he began, then as I assisted him with a violent kick he commenced to claw his way upwards, dizzy with pain and fury, becoming weaker through continued loss of blood. I was not too steady myself, either. My mighty strength and temper were commencing to tell upon my normally quiet constitution. But still I held on, the memory of Elna's death ever before me.

"Step by step I forced him up the full five hundred feet, stair by stair I punched and hammered him, until at last it was a gasping, bleeding wreck I dragged up on the observation tower platform. Below were the lights of the city, winking unmoved as ever.

"Now!" I panted hoarsely. "Even if I cannot stop the rest of your vile hordes I can at least stop you! On earth, Jelfel, there is a certain code, a law, which says—a life for a life! I am going to administer that law! I was going to kill you for your other murders in any case, but with a ray-gun—a swift and painless passing. Now it is different, for you killed Elna Folson!"

"You cannot kill a Jovian," he said in a strange voice. "Though you reduce my body to pulp the entity of Elnak Jelfel will live on—and return. You do not understand Jovian science, but when I come back, you will understand it as never before! Yes, I know you are going to kill me—at least you are going to kill this material body in which you believe is contained all my knowl-

edge and power. Commander Lee, you are making the biggest mistake of your life. One day I shall repay—my fellows and I, no matter what you may do, I will return. . . . You have fought worthily for your planet; I have fought for mine. For the time being, you win." He ceased to speak.

I looked at him closely, standing there, a bleeding wreck, before me. I clutched him by the shoulder, and to my astonishment he fell forward on his face.

Quickly I made an examination of him, found his heart on the *right* side of his chest, and was just in time to feel it stop beating. He was dead!

I felt confused. This was no ordinary death. He had just passed away, as completely and absolutely as though his real being had moved into another dimension and was even now watching me in sardonic superiority, laughing at my inability to understand.

Then I gave a snarling grunt. I picked his dead body up, raised it high above my head, and looked up at the dim orb of Jupiter.

"Here is your infernal ambassador!" I shouted in a cracked voice. "Fire a signal to his passing!" And with that I hurled his body over the platform railing.

With burning eyes I watched him fall through the city-lit darkness, saw his squat, many-legged body go hurtling down, tattered ends of garment flying in the wind. He struck the tower once in his fall and rebounded; then at last I saw him strike the ground below. If there was any doubt about him being dead before, there certainly was none now.

"Return!" I said with a scoffing laugh, clutching the rail. "Bah!"

I laughed again harshly, then it seemed as though something clutched at my throat, and the sky whirled giddily. I staggered a pace backwards, and col-

lapsed helplessly on the floor, a choking feeling in my throat.

CHAPTER XX

From Beyond Death

I WAS not unconscious for long; only a few moments. When I recovered my senses I was drenched in perspiration and very short of breath. I had a headache, and my mouth was dry. But that fury had left me; I was again normal—a bitter, but vaguely satisfied man.

I looked again over the tower edge to satisfy myself. The dark spot was still there undiscovered. At least the body of Jelfel was quite dead, but I was still puzzled at his assertions concerning his return, and his mysterious exit from life. . . . I looked up once more at Jupiter, and compressed my lips. Now indeed I was alone! Lan Ronnit gone—and Elna! A choking lump rose in my throat. I turned away and stood looking absently at the rotundity of the radio magnetizer. Could it be possible that. . .

Suddenly, out of the blank emptinesses of my innermost mind there came the idea I had so long striven to bring to light. Like a physical blow it hit me in all its vividness. I stood astounded, overwhelmed by the amazing possibilities . . . The immensity of it staggered me. . . .

"Yet it could be done!" I breathed.
"Yes, it could be done!"

I stood thinking for a moment, every detail clear in my mind. Then I shelved it for a space whilst I went downstairs again to the instrument room. Wincing from countless cuts and bruises I descended the stairs and found Elna still lying where she had met her death. She seemed peaceful now—even happy, the ghost of a smile, it seemed, about her lips.

"Elna," I whispered gently, and for a while held her already stiffening body in my arms. "Elna . . . But you shall not stay here. At least you shall have a decent burial—the hosts of earth shall honor you." I picked her up in my arms and commenced to walk towards the door. As I did so, however, I stumbled over an uneven stretch on the floor. Looking down, I saw that a heavy cable, broken in half, was lying upon it. It was evidently one of the wires that had been broken when Jelfel had fallen and brought about so many short circuits. What sort of current that wire had carried I could not guess, but it must have been a disruptive power of some kind, in the light of what took place a moment afterwards.

I remarked that the metal floor was curiously discolored for an area of about six feet around the broken ends of wire, as though a powerful corrosive acid had dropped upon it. Then, not inclined to investigate further, I continued walking across the stretch, but I had no sooner reached the center than there was an alarming crack, like ice which has suddenly received more weight than it can bear.

I gave a hoarse shout and tried to jump backwards as I realized what was happening, but I was just a shade too late. The entire metal within the discolored section suddenly gave way and plunged me into unknown depths below, jerking Elna's body from my clutch. . .

I FELL a distance of perhaps twelve feet, endeavored to stand up, and then fell again, rolling over and over helplessly, plunging downwards and ever downwards. When at last I came to rest I beheld the hole in the instrument room floor far above me like a star. I computed I must have dropped about one hundred and fifty feet. My investigatory hands came into contact .

with loose soil and rubble. Painfully I got to my feet and looked about me in the darkness. Dimly I could perceive that I had rolled down a gentle incline that had the hole in the instrument room floor fifteen feet above its upper end.

For a moment I was at a loss, then I bethought me of Elna, and immediately commenced to search, stumbling knee deep in places in the surprisingly loose soil.

At last I found her, but not before I had retraced my way about fifty feet upwards. She was lying half buried, her body becoming more rigid. Once again I gathered her into my arms, for she was rapidly stiffening into that position.

Do not ask me why I carried her corpse in such a ghoulisn fashion. I only knew that something at the back of my mind urged me to do so, despite the fact that she was plainly stone dead. I had obeyed such mental impulses before, and had always found a substantiation for them at a later point.

I was about to turn about and commence to fight my way upwards again to the summit of this underworld crater, when I caught a glimpse of something—not far away—glowing in the darkness, like some hazy, near-at-hand nebula in a pitch-black sky. I sat down with a thud in the soil and strained my eyes to look at it. It had a curiously evasive quality; but I judged its full area to be about two miles. Two miles of glowing fire-like phosphorescence. What was this new revelation of a strange Age?

I laid Elna down gently on the earth, and scrambled down again to the apparently level floor of the enormous pit. Feeling my way gingerly I went forward towards that strangely glowing region, and as I went strange thoughts sifted into my head. All this undermining—these colossal craters and pits—the upperworld only supported by the

remaining portions of rock and earth that had escaped annihilation. Of course! The atomic-bomb war of 2568! Disintegration, that had at last ceased. Radio-active soil!

"The secret of life!" I breathed suddenly, and stopped to recall the almost forgotten words of Lan Ronnit.—"Those trees have the power of instant propagation!"

At that thought I hurried on slightly, nevertheless keeping always in view that tiny hole that was my guide to the upperworld again . . . As I came to the edges of the queer phosphorescence I could quite distinctly make out the forms of trees—queer, octopus-like trees, glowering and shimmering like a fairy glade—products of the radio-active soil. I stood looking at them doubtfully wondering if any dangerous emanations came from them. And as I stood something flicked my ankle. There was something horribly nauseating about that touch. It came again, this time around my wrist. I turned with a start and saw that the nearest glowing tree had *bent over* and was extending its whip-like branches towards me. Indeed I was already in its grip!

The instant I comprehended this I flung myself backwards with all my power, digging my heels in the earth. I felt leaves that actually writhed under my clutching fingers. Further back I forced myself, and further, until suddenly there was a sharp snap and I fell on my back in the soil. I felt my body, and my hands come in contact with limp, broken tentacle-like branches, armed with powerful suckers, still clinging about me, and glowing eerily.

For a moment I was about to rip them off with unspeakable repulsion; then I stayed my hand. After all, they were not hurting me. Tempted to experiment, I tore off a tiny portion of tentacle and dropped it in the soil, peer-

ing very closely at it. To my utter amazement it wriggled like something alive, and then commenced to thrust forth a stem and tiny branches.

"Heavens!" I gasped, and simultaneously an intense delight and gratitude seized me. These, then *were* the trees that the explorer Jansen had discovered. Only when separated from the parent tree, and affixed to a substance upon which they could not possibly take root, were the tree branches useless. Though apparently dead, they evidently had the power to restore themselves to life and propagate, once planted.

I determined upon an immediate analysis of their peculiarities, the thought of Elna's dead body drifting into my mind. Leaving the sucker-like branches clinging to me, and taking good care to avoid other trees, I began to make my way back, the distant hole in the roof as my guide.

I found Elna at last, lifted her once more in my arms, and commenced the upward climb.

It was hard going in that loose rubble; for every two feet I gained I fell back six inches, but at last I did manage, by dint of much pushing and jumping, to scramble over the edge of the broken metal floor back into the instrument room.

I looked down at Elna's ashen face and silent form, and also at the pieces of tentacle tree-branch still clinging to me. In the white light they appeared greenish in hue, tapering to a point at the end, and armed, as I had noticed before, with countless powerful little suckers. The luminosity had, of course, vanished.

Only one thought was in my mind now—to return to the home of Lan Ronnit, which luckily Jelfel had not destroyed, and investigate this strange and evidently life-giving plant to the full.

HOPE born anew in my breast, I lost no time in leaving the building, after some difficulty in dodging various guards, and made my way by a stealthy detour, through the sideways between the movable buildings. It was half an hour later when I reached Lan Ronnit's abode. Quietly I opened the door as he had taught me to do, and slipped inside, switching on the shaded light.

I stopped when I reached his laboratory. There he lay upon the floor, quite dead, his hand resting on the control of the invisibility mechanism. In his fall he had pulled the switch to "Off," so naturally the mechanism had ceased. There was only one thing that puzzled me. Jelfel had distinctly said that Ronnit had been reduced to dust. Yet here he was, perfectly intact, but quite dead.

Laying Elna carefully on one of the long tables I commenced an examination of the young inventor. It took me some little time to find why he had not been reduced to atoms. The solution lay in the bench by which Ronnit had been standing at the time he had met his death. The bench was, of course, junison, and impervious to all forms of vibration. Hence, whilst the force had been sufficient to kill Ronnit, it had not succeeded in destroying his body completely.

I felt very much like an undertaker as I picked him up and laid him beside Elna. Then I set to work to pull off the sucker branches clinging to my body. This done, I dropped them carefully into massive glass jars and sealed them down airtight, until I should commence operations.

This done I set the mechanism of the house to work and took it once again to the bed of the river. Then, washed and refreshed, I commenced work in the laboratory on a lone bench beneath a brilliant solar arc, with the two corpses

for company. Yet, strangely enough, I could not credit that they were really dead, with what I had in mind for their future; if the experiments with the plant proved successful, they were merely asleep.

Taking forth my first branch specimen from the glass jar, I laid it on the table, and examined it beneath the high-power microscope. My first discovery was interesting, and a trifle unexpected. The suckers, in truth, were campanulate calyxes—leaves in embryo, which, it appeared, instead of forming into the leaf common to the upper parts of the finished tree, formed into intensely powerful suction cups instead. The stem of the branch seemed to have a rubbery consistency, possessing no brittleness whatever. I could tie it into knots and it would not break. It also had a curling tendency when lying flat, the ends quivering up after the fashion of a newly plucked human hair. Unquestionably the thing was alive within itself, I reflected, even though severed from the main tree. As I went on, I did not wonder at my sudden astounding knowledge of botany; my mind was rising to superb heights with constant exercise. I knew things I would never have dreamt of in my normal state. . . .

"I might sever a calyx and see what transpires," I murmured, and suiting the action to the word I took a sharp-bladed knife from amongst Ronnit's instruments and cut off one of the suckers. Nothing happened, save that a greenish sap oozed gently on to the bench. Struck by a sudden thought I placed the calyx in a glass jar containing water. Instantly things happened—alarmingly so!

With incredible speed the thing formed a root, a stem rose with similar bewildering rapidity, followed small branches armed with similar calyxes—upwards again and a corolla began to

form. This was too much! I annihilated it with a charge of electricity from Ronnit's instruments and stood looking at the gently steaming bowl, from which the water had instantly evaporated.

There could only be one explanation for this abnormal exuberance of growth. The trees were products of radium in the first place, just as moss and fungus is a product of damp. By some curious process, the slight radium content of the soil in which they had been born had brought about this astounding speed of growth, and incontinent propagation from any portion of the plant. This, too, was probably the cause of its seemingly life-like actions in seizing everything in its arms—or branches. I know now, however, that the plants had not a vestige of intelligent reason. They were merely attracted to anything having the minutest quantity of electricity, hence their undesirable attractions towards human beings—myself in particular. . . . In my own mind I named these astounding specimens, "electric trees."

The pistil of this curious thing was also contained in the calyx, and immediately beneath it I found the ovary, and the cell within it. This cell was crammed to the top and edges with minute, scarcely visible seeds, which explained to me how it was that, in water, the sucker had so suddenly started to grow. Those seeds had not been scattered. It had been the combined effect of all of them working simultaneously. Nor was this all. The branch itself was composed of seeds! Life within life! A botanical freak, and yet a natural plant, the outcome of radium and unknown to the botanical world.

I sat down to study the thing out. I knew of what it was composed; I knew what power of propagation and life it had. But how to apply it to restore life to a dead body? That was the problem.

I returned my specimens to the air-

tight jars and set myself to flog my increasingly brilliant mind to one of the most difficult tasks of its career.

I was still thinking it out, seated in the chair before the bench, when I must have fallen asleep. When I awoke, with a start, the whole thing was clear in my mind. I have mentioned before the ultra-sharp keenness of my perception when awakening from rest or unconsciousness. I have found it to be so in normal life; the effect was quadrupled in my peculiar mind-condition.

THE thing to do was to find how a solution of the stuff would work upon dead matter. By solution, I meant the very sap of the thing. That seemed to be the secret of its astounding activities. It also seemed a straightforward course of action, so I set to work to drain off a portion by crushing it between the plates of a small press. The resultant fluid I collected in a bottle.

As I looked at it, studied it, I reasoned. Death was due in Elna's case, not to slow decay of the tissues, as in old age, or poisoning of the blood stream, or organic disease. No, it was due to asphyxiation—stoppage of air, which had stopped the action of the heart, and killed her. Therefore, the only thing that could revive her, if it were at all possible, was . . . was . . . *energy*! I reasoned that the sap of this plant, containing as it did the energy of radium emanation, without its dangerous emanations of the three rays, ought surely to be able to do something?

I set to work immediately. I turned on the sun arcs to their full power and warmed Elna's cold body, externally. The *rigor mortis* that had set in I could not alter in the least. I felt like a madman as I filled a hypodermic syringe with the green stuff, and making a neat little incision in a vein of her arm, compressed the contents of the syringe with-

in it. There being no active circulation taking place the stuff congealed. At any rate, the only success I got was a greenish splotch beneath the skin of her arm, and a slow dropping of greenish-red blood to the table from the puncture.

I sat down and cursed aloud. The stuff had failed then, after all!

"You must start the blood stream moving—you must start the organs working again," something seemed to say in my mind. "You must start the heart! You must start the heart! As you would a pendulum to start the works of a clock!"

"How?" I snarled, beside myself with grief and disappointment. "It is beyond Man to reincarnate!"

I got up and paced about in the profoundest thought. Then suddenly I got the idea! I jumped round like one possessed, seized the syringe again, and filled it once more. Tearing off Elna's blouse with reckless abandon I bared her chest and very slowly sank the long needle down directly above the heart, injecting the liquid with a steady pressure. Then I stood back to watch. If my calculations of anatomy were correct that sap had dropped directly upon her still heart. My only fear was that I might have punctured that vital organ. If so, recovery was impossible. . . . But no!

Great heavens above!

I saw a greenish glow spread about the area of her heart. Her skin seemed to suddenly start to glow as though she were afire. The whole of her body on the left side of her chest was glowing as though with luminosity. I stood quite still, staring, and biting my nails agitatedly. Had I set her on fire inwardly? Had I, in my blundering, discovered some new form of cremation—something profane and blasphemous, to be relegated perhaps to the annals of a Frankenstein?

No. What had happened was this. The sap, upon reaching her heart—solid matter—had changed itself into energy and heat—had resolved into the form *from which it had been born!* It was delivering to her heart an energy and warmth that no electric current or arc light could ever give. Was giving the warmth of life, because the sap itself *was* life, in a chemical, minute, cellular form. . . .

I stood there, clutching the bench behind me, staring with dilated eyes. The luminosity had spread now, she was glowing from head to foot. It shone even through her clothing. I touched her, expecting almost to feel burned, but instead she was just pleasantly warm. And . . . I caught my breath in sharply. Her limbs suddenly relaxed; the *rigor mortis* of death vanished!

I whirled around, snatched a clinical thermometer from the wall and placed it under her tongue. It read eighty degrees F. and was slowly mounting. But there was no moisture on the tube of the bulb; she was not breathing. The heat **was** coming from inside.

IT mustn't fail!" I panted hoarsely. "It mustn't fail!"

I glued my eyes to that thermometer. The thread of mercury slowly rose, until at last it reached 98.4 degrees F. I watched, something clutching at my innermost vitals. Would it continue to soar, until it destroyed her completely, or would it resolve itself into its own form—life? Cold sweat poured down my face with nervous excitement and tension as I watched.

Ninety eight point four degrees. How can I describe my unutterable gratitude? The mercury had ceased to rise. I snatched the thermometer up to make sure. I checked it by the temperature under her arm and it read the same. She was normal in temperature, but still

she glowed strangely. I flung the thermometer away from me, and it splintered on the floor.

Then abruptly, through the awful, aching silence there came a deep, sonorous sigh. It was the slow intake of a deep breath. I clutched Elna's arms, and they were warm and supple, as they had always been. I stared into her face. It was no longer ashen. Tiny traces of color were creeping into it. Tiny capillaries leapt into life before my very starting eyes. Then her lips parted again and breath, glorious, life-giving breath, was passing in and out between them. I felt her heart. It was beating steadily!

"You live!" I shouted hoarsely. "Oh, Elna, you live! Thank God!"

As she continued to breathe the luminosity began to disappear from her form. She became normal in appearance, her skin pink and healthy. Dimly I apprehended that the sap of the plant had promoted life within her. Instead of changing that life into itself, propagating upon itself, it had released that mysterious, chemical reaction that is the basis of life, into her blood stream. In the first place the energy had started her heart beating. That had started the circulation—and now! She was breathing steadily, like one in a deep sleep.

She lay thus for a solid hour, an hour that passed like a year for me. I began to think that she would never recover; then at last I was rewarded by movements of her eyelids, and beheld once again those beloved gray orbs looking at me in the deepest wonderment. For a space they were quite without recognition, and a deadly fear chilled my being. Had I just restored her body, and not her real self? Had Elna Folsom herself passed into the beyond, and I had merely brought about a revived corpse that would live indefinitely? I began to fear. . . . Then she spoke.

"Why, Sandy, what on earth has hap-

pened? Have I been asleep?"

"Elna!" I shouted in ecstasy. "ELNA! You know me! You know me!"

I became undignified enough to execute a hornpipe round the laboratory, and when I got back, panting, to the bench she was in a sitting position, rubbing her chest very thoughtfully. With a sudden start of embarrassment she drew her blouse into position. "Sandy Lee, what have you been doing?" she asked suspiciously. "My chest feels as though you've been ramming needles in it. And look at my arm—it's bleeding."

"What do you remember last?" I demanded.

"Let me see? Oh, yes, Jelfel tried to kill me, and I fainted."

I took her hand solemnly. "Elna, you have been dead for nearly sixteen hours!"

"Dead!" she expostulated, her eyes round in enquiry and wonderment. "What sort of witchcraft are you dabbling in now?"

With quiet insistence I told her all that had happened, and of her gradual revival. When I had finished she smiled whimsically.

"That was wonderful of you, Sandy—I never knew you were a surgeon. I can't find any words to express my feelings, except that I know I feel quite alive. A trifle on the giddy side, otherwise all right. I thought I had been dreaming. I saw you and tried to get at you but I couldn't. I saw rosy mists, I felt chilling cold, and wandered through a valley full of glorious flowers. I saw a lot of people I used to know—I saw my Father and he tried to speak to me, but I didn't hear him. Then I felt a great and glorious warmth, a beating of pulses, a realization of sounds, of vision—and here I am. . . ." She stopped and looked at the silent Ronnit by her side.

"And poor Ronnit? Is he beyond recovery?"

"No reason why he should be," I replied. "I am about to set to work on him now."

With Elna's assistance, my first efforts were easily surpassed. I made no useless injections or blunder. Lan Ronnit revived two hours after the injection, and our emotions were of such an order, our awe at the marvel we had perpetrated so profound, that I crave leave to abstain from further describing that astounding reunion from beyond death itself.

CHAPTER XXI

I Take Command

IT WAS towards evening of the following day before we had settled down into something like normal. I remember clearly how we all three sat around the table in the small but cosy dining room, discussing the final details in this curious drama of time and space.

"I got the idea of wiping out this Jovian menace when I recovered from the reaction of fighting Jelfel," I said. "It came to me quite clearly, but don't gasp at what the idea is, or what it involves. Briefly, we must destroy Jupiter itself! Jelfel swore that nothing we could do would stop him coming back, but we'll do all in our power, anyhow. We must destroy Jupiter."

"Easy," Ronnit said drily. "We'll do it right away!"

"How on earth do you propose to do it?" Elna asked, frowning her brow. "By a pretty tough mental strain I can grasp what you're driving at, but you'll have to explain fully to make it reasonable."

"Scientifically possible, you mean," Ronnit said.

"It is scientifically possible," I responded steadily. "I've worked it out to

the last equation and geometrical value. We're up against all Jupiter now, and whatever may happen with regard to Jelfel's assertion that he would return, we must take every safeguard, so far as we can, from an earthly standpoint. That safeguard is to hurl Jupiter, and his nine moons, clean into the sun!"

"What!" Elna and Ronnit ejaculated simultaneously, gazing at me blankly.

I nodded silently.

"But it's impossible," Ronnit protested. "You're talking absurdly, Lee."

"No; I am stating a scientific fact. Given sufficient power it is possible to hurl Jupiter into the sun. But before that can be done every preparation must be made for all the people of this Age to be transported to a future time, beyond all reach of the events that are to happen. Otherwise it means death. I see clearly now what is meant in Time by that vision of this Age as a blackened wilderness. Don't you see that when Jupiter is hurled into the sun a vast amount of outflowing gas and energy will be literally spewed into space. For a time the earth will be enveloped in devouring flame. When the fire subsides it will, for a time, be a charred world. But later on, as Time has shown, Life continues. We will transport these people to the Age of Intelligence where they will be safe and cared for."

"How can you be sure if all this?" Ronnit muttered.

"For two reasons. One is that I have mathematically proved it—and the other is the charred world further on in Time, which cannot be disputed. We *shall* succeed!"

"An astounding feat," Elna muttered. "But what of the other planets, Sandy? Think of the frightful changes in gravitation, the shiftings and the upsets."

"I have all that planned out," I answered quietly. "You will see later on. I got the idea of this Jupiter-hurling

stunt from Jelfel's radio magnetizer."

"A polarizer of radio waves will not magnetize a solid body," said Ronnit, with the cold incisiveness of the true scientist.

"Maybe not, but it provides the fundamental of the idea," I said. "Jelfel's system is that of polarizing and attracting the electrical content of radio waves. . . . Now, gravitation is the attraction of any body or mass, varying with the size and density of the object, is it not?"

"True," said Ronnit quietly.

"Very well, then. Gravitation, in cold truth, is reversed propulsion."

"In a sense, I suppose it is."

"Propulsion, as I see it, is the process of driving a body forward either by a momentum to start the object going, or else within the object. Now, that force of propulsion can be humanly made by reflecting back the sun's force of propulsion upon any given body."

"How?" Ronnit demanded.

"The sun emits force? You admit that?"

"Certainly, but in no way in which it can be used."

"Up to the present it hasn't been used, except for such things as heaters, etc., but that force has incalculable strength, if you know how to use it. Jelfel's magnetizer gave me the idea. The metal of that diaphragm of his is the secret, for what can have attraction can also have repulsion, for there is nothing that cannot be reversed in force if you know the formula. I should imagine that the real thing to reverse the action of the metal would be a magnetic current of some kind. However, we have that to find out."

"I understood you to say *reflect* the sun's force?"

"Precisely. Perhaps I haven't been very lucid. This solar force must act upon the metal concerned, but also it

will have to be propelled outwards through space again. We must have the power in our metal to throw back the sun's force when we get it."

"I begin to see," Ronnit murmured. "Analyze that diaphragm of Jelfel's magnetizer, find the correct metal, substance, or current to reverse its action, capture solar force upon it, and then find a means of reflecting the force back on Jupiter. But, even so, that won't counter-balance the sun's gravitation."

"That's just it," I chuckled. "Centrifugal force is holding our planets away from the sun, but what is to happen if there is a slight balance on the wrong side of that mathematically perfect union? The pressure of a finger, to use a metaphor, could wreck a universe, so slight is the dividing line. A beam of force hurled at Jupiter will push him forward. He will stumble, narrow his orbit, and at last fall into the sun. That is the plan."

"That's all right, but suppose that instead of shifting Jupiter's great bulk we only push the earth into the void? Like a man trying to push a time liner?"

"We shan't, Ronnit. We will set to work to calculate how to use a field of gravitation that will, metaphorically, hook us to the sun. We will increase the sun's power of attraction, or else the earth's weight, in accordance with the force we hurl at Jupiter. Thuswise we'll remain steady and push Jupiter off the Universal map!"

Ronnit blew out his cheeks. "A tall order! Still, it might work. That brain of yours seems to be working overtime."

"This will be my last effort," I responded. "I feel it. I can't keep up the strain of contemplating all this data much longer. Once this task is done I shall begin to go back to the normal. Don't you think so, Elna?"

"You ought to!" she said with a

smile. "I'm doubtful if mine will reach as high as yours even as it is."

I rose to my feet. "We must tell the people of our plans. We must have them on our side. We'll want every available man for the construction of our machinery. I've little fear that they'll fall in with everything we suggest. Once they know of the menace they will assist..."

And my presumptions were correct. The finding of Elnak Jelfel's dead body—the discovery that he was not an Earthling like themselves—had wrought fear in the downtrodden folks of the Age of Problems. They turned to me, as I harangued with them from the door of the late Jelfel's Headquarters, and listened to all I had to say. At my request for trained scientists and mathematicians to aid me, a body of about six middle-aged men came forward to my side. The rest contented themselves with cheering, which veered off into wild revelry at the sudden emancipation from Jelfel's merciless rule.

"Work must go on!" I shouted in conclusion. "You must build time machines—as quickly as you can. You will all start work tomorrow upon the orders I give you. You foremen will receive the plans."

The crowd roared its pleasure and shook grimy fists to the skies.

"Down with Jupiter!" somebody yelled, a trifle ludicrously; and the cry was taken up unrestrainedly.

I turned to my six new helpmates. "Come, gentlemen, I would like some discussion in private."

I led the way into Jelfel's instrument room, and closed the door.

In accordance with pre-arrangement, Lan Ronnit and Elna were already there, awaiting me. It felt extraordinarily good to have this marvelous instrument room under my control, to feel that everybody relied on me for deliverance. I might have trembled at the onus it entailed,

had not my mind been so gloriously keen and prescient.

I turned to my new assistants, and mentally decided that they were an able-looking sextet of men—lean faced, three of them, bald-headed, and with keen, discerning eyes.

"Gentlemen," I said, "we are now faced with an extraordinarily difficult problem, but there is no reason why our combined efforts should not solve it. We have several things to accomplish, and I will enumerate them. Please make notes. One: To find the correct substance for reversing the process of Elnak Jelfel's radio wave magnetizer. Two: To discover and determine the force necessary to hurl Jupiter and his moons into the sun. Three: To discover a field of attraction—artificial gravitation—capable of counterbalancing the weight of the thrust upon Jupiter. Four: To compute the speed of the reflected force through space. Five: How long it will take to shift Jupiter. Six: How long a life may be granted to earth, in this Age, after Jupiter has gone into the sun. Seven: What actually will be the outcome of hurling Jupiter into the sun. That is, what alteration will take place in the Solar System, and what will happen to sun and earth. The rest will be my work. Time machines must be built with all speed to enable the people of this Age to be transported forward to the Age of Intelligence. . . . Now, gentlemen, you understand your work?"

Anton Frot, the tallest of the group—lean and bald, with small veins pulsating at his temples—nodded.

"As a mathematician, I will personally conduct the investigation," he said in a deep voice. "You have my promise on that, Commander."

I clapped him warmly on the shoulder. "Spendid, Frot! That will do admirably. . . . And now I must be getting

about my own work. You know my abode when you have news."

I left the six in the instrument room and went outside with Elna and Ronnit. The seething revelry was still continuing with unabated vigor. I looked at the people in the city light, and shook my head.

"Always the way!" I muttered. "So soon as a real crisis arrives, so soon as a man is face to face with disaster, he will not tackle danger there and then! First he must satisfy himself—afterwards duty. Save for a cherished few, such as our noble friends in the instrument room . . . We'll leave them until tomorrow. Come on."

CHAPTER XXII

Anton Frot Elucidates

ANTON FROT, the mathematician, arrived at our abode early the following morning. His face was drawn and tired, and his brow creased in furrows of concentration. In his thin hand he held a sheaf of papers. At my invitation to a chair and a drink he nodded a warm thanks, and a tired smile touched his lips.

We three gathered about him.

"Well," he said, placing his finger tips together and lying back in his chair, "we spent the night working on the figurative portion of your scheme. The conclusions we have reached are quite successful, but there will have to be amendments in your original idea. To start with, Jupiter will not be in a convenient position for us, in a dead line, for several years!"

"Good Lord!" I muttered in annoyance. "I never thought of that."

"It doesn't really matter, Commander," Frot said, unmoved. "The task can still be accomplished, but we shall have to throw Jupiter into the sun by a system that we might term—'pendulumatic.' In-

termittent thrusts upon the planet which will be counterbalanced by the sun, and subsequently cause Jupiter to be entirely chained by his attraction, and hence hurled into our luminary."

"I don't follow," I said.

"I will make it clear. This solar force you propose reflecting upon Jupiter must be used periodically, not constantly, and must push Jupiter away, not towards, the sun. Then, when you remove your force, Jupiter will swing inwards again, drawn by the sun's attraction. Again you will do the same thing—a little longer each time. Thuswise, by gradual stages, you will get Jupiter to swing backwards and forwards like a pendulum, each time taking a bigger swing, until at last he passes over the line of attractive demarcation, and drops into the sun itself."

"I understand," I nodded. "Congratulations, Frot. You have the figures, of course?"

"On the table there, Commander. The swaying of Jupiter during this process would cause colossal strains upon the earth. Mainly tidal waves and landslides as the orbit and force of attraction is altered. All this can be prevented by the gravitational 'field.' By arranging it so that it balances the force flung at Jupiter, the earth will be held steady. How the other planets will fare, I have not determined, but I fear me that the hurling of Jupiter into the sun will take along the other outer planets as well—Saturn, Uranus, Neptune, and Pluto. The inner planets, being, as it were, inside the disturbance, will not I think be affected. I can't guarantee it, however."

"Whatever happens, we must carry on," I said resolutely.

"Quite so, Commander—quite so. Well, Kenton, our astronomical colleague, has pre-determined most of the other details. The hurling of Jupiter alone into the sun—excluding the possibility of

other planets—will cause the sun to become a 'nova.' The body of Jupiter will cause what we might term a pocket in the sun's gaseous envelope. The sun, being a gas, will cause this tremendously heated pocket to explode, owing to the colossal center of heat about the planet lying within the sun. It is very likely that the explosion of this pocket will blow the upper layers of the sun clean away, the force being so terrific that the sun's gravity could not possibly hold them. Hence, the sun will become a nova. The calculation is not altogether clear whether the sun will be burned out completely, or whether it will remain at a small percentage of its former power. From visits in the time line, we may be assured that the latter will be the case. However, the outflung gas, hurtling through space at about seventeen hundred kilometres to the second, will reach earth in about twelve hours or so. The result will be that the entire surface of the earth will be burned to ashes. Such are Kenton's calculations upon the effect of hurling Jupiter into the sun."

I nodded. "I expected that. What else have you found?"

"Isaton has proved the most important thing of all. That is the gravitative field to hold us to the sun whilst we act upon Jupiter. Gravitation is, of course, caused by every particle of matter attracting every other particle, with a force exerted along the straight line joining the particles. This force is directly proportional to the product of the respective masses of the particles, and inversely proportional to the square of the distance between their centers of gravity. That being so, the force of attraction at the approximate center of the earth will have to be increased mutually in conjunction with the force of propulsion expended upon Jupiter. Gravitation is caused by the body itself, by the electrical content of its atoms and the atomic

aggregates, the molecules. Hence, Isaton has calculated, that the gravitation of a body depends upon the quantity of electricity contained within the atomic content of any given substance. Now, there is only one metal on earth that will stand an almost infinite increase in electricity in its fundamental atoms."

"And it is?" I asked.

"Iralium! By electric current, projected at a tremendous speed, it is possible to make iralium weigh almost anything up to infinity. There is an ultimate point, of course. I am merely speaking figuratively. However, iralium will solve our difficulties. Iralium atoms, and electric current. Iralium atoms are unknown to science so far as I know."

FROT ceased his scientific disquisition for a moment, and finished his drink.

"You've worked hard to sort all this out," I said.

"Interesting, but tiring, Commander. Now, regarding the speed of the reflected force through space. It is nearly that of light—178,000 miles a second, to be exact. That is, it will take it 40 minutes to reach Jupiter, at his present distance of 400,000,000 miles. Regarding the reversion of Jelfel's magnetizing plate. I have Landon working on that, and so far he hasn't reached the solution. He will acquaint you the moment he does so. The time required to shift, Jupiter into the sun will be six weeks, so far as I can calculate. That, I think, is all for the moment. Here are the notes. You would perhaps care to look them over?"

"Thanks," I said; then as he rose to his feet. "You say iralium, by electricity being supplied to its atoms, will create a terrific gravitation. But how much iralium is it going to take to do it?"

Frot smiled faintly. "A plain, one mile square, on the side of the earth

exactly opposite, and at the absolute Antipode, of where the propulsive force will be."

"I begin to see," I said. "Iralium, by the increase of gravity in the atoms—the increase of electrical mass—will cause the metal to assume almost any given weight, and so counterbalance the force of moving Jupiter?"

"Exactly."

"Isaton was a genius to find that," I murmured.

Frot nodded. "So I thought when he elucidated. Well, that's all for the moment, Commander. I'm going along to get a little sleep—I've earned it!"

I accompanied him to the door. "See you later," I smiled, and watched him stride away in the direction of his movable home. I returned to the lounge and surveyed the mass of notes. I felt rather puzzled at my seeming inability to fully grasp matters, as I had the night before. Had I but known it that extraordinary lucidity of reasoning was again on the downward grade. Very rapidly I was once more descending to the level of the normal.

"Well, that fellow certainly knows a thing or two," Ronnit commented. "And to think I called myself a scientist! In future I'll dig trenches. . . ."

"You are an inventor," I replied, clapping him on the back. "Trained reasoning, such as Frot has revealed, is purely the outcome of practise and logic. Ask him to conceive the secret of invisibility out of nothing, and he'd be floored. Don't you be misled, old man; you're the cleverer of the two by long chalks. What do you think, Elna?"

"Every time," she answered, without looking up from the notes on the table, in which she was absorbed. . . .

LANDON kept his word and succeeded in solving the problem by midnight of the same day. He himself came

to our abode. Expecting him to come we had not retired for a well-earned rest after our activities of the day.

"I've been rather a fool," he said apologetically as he entered. "The solution is fairly simple, Jelfel's system of magnetizing the radio waves lay in the plate—the diaphragm—itsself. I've analyzed the plate, and it's made of three elements—one is pure copper, but the other two are absolutely unknown to the earth, but they're going to aid us enormously. For one is nothing more or less than *pure magnetism*, and absorbs and retains any known force, whilst the other is *pure repulsion*! Can you beat that? The effect of all these two and the copper combined was to produce just enough of both magnetism and repulsion to collect the radio waves and re-transmit them. But we will be different. The elements can be duplicated. The magnetism element will be made into metal sheets, and likewise with the repulsor. Hence, we will draw the solar force with the former, absorb it, and pass *via* cables to the propulsor—or repulsor, which ever you like to call it. Thus, both the artificial gravitation sheet or iralium, of what Frot told you, and the magnetizer of solar force, will be erected on the other side of the world, at our Antipodes. Cables will be brought round the earth from the magnetizer and transmitted to the propulsor. Thus, whilst the power is drawn from the sun at the Antipodes, we will project the power from the night-side on this side of the world. . . .

"That is all."

My eyes were gleaming.

"That completes everything," I said in satisfaction.

"Save for calculations upon the strain imposed, and other details of trifling nature," Landon said. "That can take its turn, however. For the time being, we know all we need to know. . . ."

CHAPTER XXIII

Into the Sun!

THE following day work commenced in real earnest. I had already made the first advances to the workers, but now I had definite details to work upon.

I spent the entire morning giving them instructions for the future, and arranging the necessary men for the individual tasks we had on hand. In all, in the Age of Problems, there were twenty thousand souls. I divided these into ten thousand each, and gave orders that all the other cities of the world were to do likewise. One section was to begin work immediately upon time machines, the plans of which I had supplied from Jelfel's own notes.

Another section was despatched to the other side of the world to start building the square mile of iralium gravitator and the solar magnetizer, and also to arrange for the cabling to carry the power around the earth to this particular spot.

A man named Dil Yedson I placed in charge of the emigration movement, having already made arrangements with the Age of Intelligence to receive the peoples of this Age . . .

And so our plans went forward, week by week, with perfect smoothness. Under the direction of Landon and Anton Frot the mighty Propulsor was erected, a great, towering affair that reared its challenging bulk to a murky grey sky. The etheric shield had of course been retained, but its secret was preserved for future use. I also took charge of the secret plans of many of Jelfel's brilliant inventions, that they might be used if ever it was again necessary.

Reports from the Antipodes announced that the Gravitator was going ahead perfectly, and also the Magnetizer. Already the cabling was well ahead in con-

struction, and radio had been established between the two opposite points of the world.

Night by night, Kenton, the astronomer, kept Jupiter forever in the range of Jelfel's own mighty reflector. I would sometimes find time to be with him, and would gaze down into the silvered mirror upon that equatorially bulging spheroid, with its plainly defined Red Spot. I wondered if the Jovians knew what we were about to do? Had they already departed to safety before we could wreck their world, and were waiting to wreak some horrible vengeance upon us; or were they all unaware of impending doom? . . .

So matters progressed until the fated night of December 19th. This was the night set for commencement of our activities. Everything was in order—instruments fully equipped, cables laid, radio connection between the two vital factors, and every computation and figure determined by the brilliant Anton Frot.

Fortunately the night was fine. Jupiter, by now, was setting later in the night, and so skillfully had Kenton calculated his figures, Jupiter was "south-ing" at the time we set to work.

Everything was ready. I felt a trifle nervous as I stood there at the top of the propulsor tower, with my eight companions, the winking lights of the city below me, and the walls of switches all about me. Through the observation window I beheld Jupiter in a cloudless sky, dead to the south. I lifted the radio transmitter to my mouth, and at the same time fingered the master-control of the Propulsor. I thought of those mighty cables reaching from the other side of the world, carrying that solar power to this engine of destruction. . . .

"Go!" I said curtly, waited a second whilst the radio-wave hurtled round the earth, and flung in the switch. Nothing apparently happened. There was sil-

ence, save for the buzz of generators and impedimenta, which proved, anyhow, that the current was coming through all right.

Kenton was leaning forward, staring at Jupiter as though he expected it to vanish from the sky; then he excused himself and made with all haste to the observatory to take notes. Isaton stood silent and pensive. Anton Frot's keen eyes were upon the dials and chronometers. . . .

For two hours, the reflected solar force, guided to follow Jupiter by clock-work motors, entirely invisible, must have been hurtling through 400,000,000 miles of space, to impinge upon the sun's biggest child. The enormity of the task rather overawed me. With one hand I was deciding the destiny of a planet 1400 times the earth's volume! Had I any real right to decide what should be done with such a monster! Yet after all, I was doing it to save the earth. I felt comforted by the hand of Anton Frot placed reassuringly on my arm. His intense eyes were dominating in the bright light.

"Don't weaken, Commander!"

So at the end of two hours that 148,000 per second force was stopped, and after giving the necessary orders for stoppage at the Antipodes, we all hurried over to the observatory.

Kenton was peering into the refractor mirror, staring with scarcely blinking eyes at Jupiter's huge bulk. In silence we grouped about him.

"Doesn't look much of a success," I said presently.

Kenton did not reply immediately; he was looking intently at the hair line cross on the mirror. "Calculate 30 minutes for the light to reach us," he said curtly; then at last in a voice of ecstasy, "Look! He's moving! LOOK!"

We followed, quite needlessly, his fixed, pointing finger. With burning eyes

we all stared at the great mirrored surface. Distinctly now we could see Jupiter shifting slowly backwards along the mathematically perfect hair-line. The movement was slight, but it was obvious.

"Why so long afterwards?" Elna muttered.

"It took forty minutes for the force to reach Jupiter, and thirty minutes for the light to be transmitted back to us. Even now we are looking at a spot Jupiter no longer occupies. We are merely seeing the light image. Anyhow, we know our computations are correct. He is now swinging slightly backward out of his orbit; in time he will swing slightly *inside* this orbit. Then again the force—and so on, until at last, . . .!"

IT was nearing dawn, and Jupiter was not far from setting, when the order came again for the second attack. Once again, until the planet set, that force was hurled at it; once again, at the Antipodes, the Gravitator and Magnetizer functioned perfectly. Indeed, the controllers of the Gravitator and Magnetizer, had to work containtly, in shifts, to keep the lurching earth steady, for even the very commencement of the shifting of Jupiter was commencing to cause strange cosmic disturbances. . . .

Once the business was started we were kept at it almost ceaselessly. I took to sleeping by day, and working by night. Even on cloudy nights our calculations were perfect enough to enable us to continue the attack on Jupiter without seeing him—and as the days and nights went on he swung farther and farther out of his orbit, pursuing a drunken, zig-zag movement around the sun.

In a brief interval I made arrangements for televisors to be erected at both our own depot and at the Antipodes, so that, when the time came for us to depart, we might be able to view

the proceedings from our time machine, so long as the televisors stood. These became known as the Day (Antipodes) Televisor, and Night, our own, of course.

Emigration to the Age of Intelligence had been completed by the fifth week. The only souls remaining in the world, in the Age of Problems, were myself and comrades, and the band of workers at the Antipodes. All of us had time machines ready and waiting for departure. Whilst the Antipodes unit would be going to the Age of Intelligence along after the others, I had decided to return to my own time, 2000, with Elna, Anton Frot, and other scientists, mainly to satisfy myself on a final paradox of time which had long been bothering me.

At the close of the fifth week, Kenton was jubilant.

"Calculated perfectly!" he declared. "Eight more days and Jupiter will swing so far sunward out of his orbit that it spells disaster for him—and unless I'm very much mistaken, for the other planets too."

With unremitting zeal we kept to our task, until we came at last to the concluding night. Again the force was hurled forth, then, to the second by Anton Frot's chronometer, I shut off the mechanism and bawled into the radio transmitter, "Run! Leave the Gravitator on to counterbalance any disturbances."

There was really no need to run, for the danger was not immediate. Jupiter was in the sky as usual, apparently. But the fear of imminent happenings prompted us all to race for our time machine as fast as we could go. The moment we were within Kenton slammed across and sheathed the manhole door. I jumped to the controls, threw in the repellers, and watched that deserted, machine-mad land warp into the fourth dimension and vanish. We were away in Time—safe—so far back as to be beyond all hint of

destruction. And, somewhere else in Time, going forward, would be the machine from the Antipodes.

We turned our attention to the televisor screens, and beheld again, on the Night Visor, the deserted, darkened landscape we had left, with the star-ridden sky above. In the other Visor we beheld the sun, near to setting, with the dully gleaming square mile of the Gravitator, and the belying bulk of the Magnetizer plainly visible. . . .

In silence we watched the night view, then I felt Elna's hand tighten upon my arm. Subconsciously, I heard a sharp intaking of breath from the others grouped about us. How light travelled, or how time operated *via* a televisor in Time, I have no means of estimating. The fact remains that we saw Jupiter was moving, very slowly, towards the sun. We had been too late to see how far it had swung on the backward motion—"voidwards," to be precise—but now it was plainly gathering momentum on the sunward side of its orbit, too far away to recover itself. Again I wondered. Was the planet empty? Had the Jovians beaten us to it? Or . . . ?

Gradually the planet increased its speed, but even so it only seemed the veriest crawl. Actually, it must have been hurtling with terrific velocity toward the sun, its acceleration ever mounting. . . .

Still in dead silence we watched it. The pace increased very slightly—it moved with an apparently steady speed amongst the stars. As we viewed it with the naked eye, we could not discern its moons, but undoubtedly they must have been following somewhere. Then Kenton gave a shout!

"The other planets! There they go!"

We watched tensely. Sure enough there was yellow Saturn and green Uranus. Neptune and Pluto were too distant for our observation, but it was logical to assume they were also making

the sunward journey, helpless, careening through infinity. . . . It chilled me a little.

ONWARDS—ever onwards! The pace increasing with every moment as the sun pulled triumphantly upon its erring children. A snail's pace from our viewpoint, yet actually a dizzying, stupendous onrush. At last the planets vanished from view behind the horizon. We turned to the daylight televisor, regretting we could not behold the actual fall into the sun.

I don't know how long we waited before we saw the sun, near to setting completely, apparently bulge outward upon every hand. Astounding streamers and bolts of light were cascading through the desolations of the twilight heavens. The brilliance increased; we were forced to shut our eyes. I obtained one momentary glimpse of a blinding mass of flame hurtling from the skies to the earth—searing, sight-destroying. In the Night Visor, too, the sky became, in the east, a sudden boiling mass of swirling, death dealing incandescence. . . . Jupiter had entered the sun. The televisions both went black, the transmitters destroyed.

We stood looking at each other in complete silence for a space—and strange it was indeed to behold through the time machine's window, owing to our occupying an earlier time, the body of Jupiter still serene in the heavens! The words of Anton Frot seemed to sum the matter up beautifully:

"So be it!"

CHAPTER XXIV

The Final Paradox

SO it came about that Elma and I, and our scientific colleagues, returned to 2000 A.D.

To the utter bewilderment of Elna, everything was as it had ever been. The

only thing different was that, according to report, a "mirage earthquake" had taken place some weeks previously. This constituted the apparent wrecking of the entire city—and it had happened all along the time line right up to 22,000—but immediately after the mirage earthquake, everything was as it had ever been. Such occurrences, we were told, were not uncommon since the discovery of Time. Upsets in past or future times had brought about this queer effect, which reduced human beings to a comatose condition often resembling death, but not actually death. To Elna's intense delight we learned that President Folson was not dead. He had been injured during the mirage earthquake, had been robbed of plans by some agency during this condition, but was now quite well again. . . . The same thing had happened to Templeton.

"First I must see Templeton," I said quietly, taking Elna's arm. "Then we'll go along to see your Father."

"But, Sandy, I don't understand it all. I——"

"I'll explain in a moment," I promised her. "Come along."

We entered, after the usual procedures, the Debating Chamber of the Time Liner Corporation. The Directors were there, but Templeton did not wait until I reached the table. Instead he came rushing forward gripped my hand.

"Commander! Miss Folson! I have done you both a grave injustice. I learned the truth of your statements only recently. I have learned also of your wonderful brilliance in outwitting the Jovian menace. Congratulations! Congratulations! Here!" He removed a badge from a plush case and pinned it on my chest. Then he saluted and stood back — "Gentlemen — Commodore Com-

mandant of the Time Liner Corporation—Master Pilot and Chief Director of Time Ways, Sandford Lee! . . . That, Commandant, is the greatest honor we can bestow. . . ."

"**T**HANK goodness I'm fixed up again, anyhow," I said, as we went down the steps of the building. "I'm the Big Noise now, and I'm going to make a few improvements—but come along. Let's get ready for seeing your Father. We must pack. . . ."

"One moment," she said. "How do you explain this mirage earthquake business? Did we dream it, after all?"

"No, Elna. I knew this would happen. It's just like I explained to you once before. You can't bridge 'blank' time, and you can't make the future coincide with the past. . . . If you try it, as Jelfel did, it seems that disaster happens *during that time*, but afterwards everything reverts to normal. . . . Just like a dream!"

She pushed a hand through his thick fair hair.

"There's only one thing to do, and that is quote Ecclesiastes," she said, ruminatively. "I know my Bible well, and in Chapter 1, verses 9 to 11, he says 'The thing which hath been is that which shall be, and that which is done is that which shall be done, and there is no new thing under the sun. Is there anything whereof it may be said, See, this is new? It hath already been of old time, which was before us. There is no remembrance of former things, neither shall there be any remembrance of things that are to come with those that shall come after.' That just sums it up. . . ."

"Exactly," I assented, and taking her arm we went down the broad steps.

Motion Picture Review

By C. A. BRANDT

A so-called 'phantastic' film is being shown in one of the smaller cinemas under the name of the "End of the World." We cannot exactly recommend it, but it is interesting nevertheless, particularly the first part where Dr. Clyde Fischer, curator of astronomy of the American Museum of Natural History reads a short but very interesting lecture.

This film is not based upon Balmer and Wiley's book "When Worlds Collide," but upon a now hopelessly antiquated book "La Fin Du Monde," by Camille Flammarion. This book was written many, many years ago when mankind was enjoying its "Kometen-furcht" (fear of comets) to its very fullness. Besides Flammarion, there have been many cometary croakers, predicting the end of the world with the appearance of this and that comet. At the time when Flammarion wrote his book, comets were not as well understood as they are today and the investigations of the last twenty years have brought out the fact that comets are nothing but harmless space tramps, some of which have a regular beat and re-appear at certain fixed intervals and others, which appear only once never to appear again.

In 1832 Captain Biela discovered a comet, which was named after him and he also predicted the sure end of the world. His comet unfortunately got tangled up in the orbit of Jupiter and was not only unable to do any harm to any of Jupiter's moons, but was severely damaged and virtually split in two through the gravitational pull of this immense planet.

Twenty years before the French Revolution took place Lexell discovered a comet and also predicted the end of the earth. The same happened when Halley's comet re-appeared in 1910 after an absence of seventy-five years. Incidentally Lexell's comet is the basis of Flammarion's tale, but in the meantime, the bluff of these cosmic tramps has been called. As stated before they are perfectly harmless and whenever a comet has come into our solar system and approached one of the planets, not only nothing has happened to the planet, but the one who suffered was the poor comet. Halley's comet

also got severely damaged during its last visit with our solar family and in 1985 (should you live to see it) it will be very pale and very puny. In 2060, its probable last appearance, it will be barely visible.

All the fanciful tales of comets (pardon the pun) whose tails are composed of everything from hydrogen gas to cyanogen are just so much stuff and nonsense and if you should hand your fourteen year old hopeful a copy of the "End of the World" by Flammarions, he would probably hand it back with a remark, "that's old stuff," or words to that effect.

The film itself shows what mass-fear can do to the "stimmvieh" (voting cattle) *alias* humanity, only none of the scenes ring true. Neither are the scenes of a devastated countryside very impressive. They remind one strongly of the scenes when the prospective buyers of liberty bonds had to be attracted to the dotted line by pictures of poor Belgians, etc. The film alternates between scenes of riot and peace. The riots also remind one strongly of war film propaganda and the scenes of alleged debauchery are tame compared to what we have seen in the past, at hotels and clubs in New York during Prohibition on New Year nights. The scenes of peace are shots of a church where monks are tolling bells and are singing in near harmony. The comet and its approach are screened as sheet lightning, toally unpalusible. The "clew" is a projected picture of the earth being just missed by the comet (by about ninety million miles). As the comet approaches closer to the earth, the comet appears as a sort of illuminated asparagus with an over-size head and we are treated to various shots—agitated clouds—swirling waters—wild birds and quadrupeds in headlong flights, etc., none of which is convincing at all. The only scientific thing in the entire film is pictures of immense switchboards, radio installations in the Eiffel Tower, etc., and though the actors seem to take their parts very seriously, the film just misses being ridiculous. Besides, the dialogue is in French and the English titles are thrown on the screen to make the dialogue understandable.

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

A Sermon Inspired by the Work of Leonardo da Vinci—An Inspiring Letter from a Catholic Priest

EDITOR, AMAZING STORIES:

An impulse I could not resist, moves me to say in words, how much I enjoyed the editorial in the current April issue on Leonardo of Vinci.

The mathematical analysis of Mona Lisa and the Last Supper furnished me with a sermon thought never realized when twenty-four years ago I trudged with tired eyes through the Louvre, or when in the city of the "Last Supper."

In the appreciative article on this restless—almost ultra-modern genius;—in the Catholic Encyclopedia, by L. van der Essen, there is emphasized the two motivating pulls that lifted this man above his brethren in the Renaissance as a cedar of Lebanon above a scrub pine; namely, a conviction that science must and should yield to formulation in mathematical laws; that science has power over nature—and that with intelligence, patience and persistence the true, not the quack-grass variety of scientists, may foresee, imitate or even reproduce natural phenomena.

Bonaparte, by personal order, enjoined no injury to the Last Supper, but his soldiers in the refectory of Sta Maria delle Grazie added to its mutilation.

With good wishes,

Rev. J. F. McCaffery,
Immaculate Conception Church,
Masonville, Iowa.

(No letter has ever been received by AMAZING STORIES more appreciative than this. We leave it to speak for itself, which it does most eloquently.—EDITOR.)

The Present AMAZING STORIES Commented On—Praise for Doctor Keller—English vs. American Orthography

Editor, AMAZING STORIES:

I do not often contribute to our correspondence column, and when I do it is with praise rather than with criticism. Oliver Saari speaks, in the May issue, of the "good old days" of A. S. It is possibly true that stories like Merritt's "Moon Pool" and Smith's "Skylark" are few and far between, but I think that any unbiased critic must agree that the average grade of literature appearing in A. S. in recent years is distinctly higher than in the "good old days."

Dr. Keller seems to be one author whom everyone likes, but I wonder how many readers realize the reason. Analyze one of his stories and you will find that the peculiar charm lies not so much in the plot, but in the underlying current of good natured satire. Dr. Keller has developed "style," the ambition and the despair of all serious writers; the leaven without which every literary loaf must remain nothing but a heavy lump of dough, that will never "rise" above the mediocre.

Reading Mr. McNairn's letter in the May number makes me almost ashamed of my British citizenship. Possibly Americans (and Canadians) write labor without a "u," but at least we do not drop our aspirates and say "shyme" for "shame" like our friends from Little England "down under." Mr. McNairn and his "it's not your language, it's England's," reminds me of an Englishman who came to Canada and was unable to find work. He was very indignant and exclaimed: "What! No jobs! And you belong to us!"

I wonder if your readers could supply me with two or three copies of the number for June, 1927. This is the issue containing my story "The Visitation." I will gladly pay full price. My own copy has departed *via* the "lending" route.

I have been intending for a long time to write a sequel to "The Visitation." In fact it's half done, so one of these fine days you might have a chance to pitch it in the good old W P B.

Good wishes and good luck from a "bally Englishman," who spells "labor" without a "u"!

Cyril G. Wates,
7718 Jasper Ave.,
Edmonton, Alberta,
Canada.

(The omission of the letter "u" from such words as "labor" is a step in the direction of correct etymology. Imagine the attempt to get an oblique case out of a Latin word of the third declension spelled incorrectly with a letter "u" after the "o." There is no doubt that Noah Webster went too far in some of his departures from the orthography of the early 1800's, and he favored simplicity and a more or less rational spelling. The eminent critic, Richard Grant White, called English the "grammarless tongue." He might have hit it on its eccentricities of spelling.—EDITOR.)

Suggestion and Complaint from One Who Likes AMAZING STORIES

Editor, AMAZING STORIES:

Here is a letter I wish you would print. Many of your correspondents keep yelling to keep up with present scientific discoveries. I say: STAY AHEAD OF IT ALL! Most of the authors do that, but they take too many liberties.

For instance: In the story "Earth Rehabilitators, Consolidated," you have what is called a communicograph signalling to Spica, a star in Virgo. This is understood to be advance radio, even if it is not said to be. Radio waves travel at the same rate as light, namely, 186,000 miles a second. It takes the sun's light over eight minutes to reach us, so how the deuce do you get instantaneous answers from Virgo, millions of light years away?

Now if you had someone invent an "Ether Control" or something to speed radio waves up, it might mean something.

Another thing is having the illustrations always showing a man in a space suit sitting or standing upright in respect to the page. That's wrong. Also it is wrong when a machine or space ship with rocket tubes idling is shown with the gases going up with respect to the page.

Well, anyway I like the magazine and what they don't write we can guess.

F. Wochna,
General Delivery,
Oakfield, New York.

(Your objections are not very clear, but we leave them to our readers to peruse, and for the authors to answer. The point, which you take, about men in the illustrations is not intelligible; as you do not tell which illustrations you refer to. Your two expressions, "upright in respect to the page" and "up with respect to the page" also are not clear.—EDITOR.)

A Very Suggestive Document—We Shall Hope to Use It in the Future—Some of Its Suggestions

Editor, AMAZING STORIES:

This is my first letter to you, though I have been reading your magazine for a good couple of years. There are a few things that I wish to say. What made the greatest impression on me, while reading science-fiction was, "The Seeds of Life," by John Taine! I consider this story as the greatest you ever printed! You would make a step forward in science-fiction, if you could arrange for the reprint of this author's books.

So far there has been nothing radically new in modern science-fiction, since its inauguration with the AMAZING STORY publication. I mean either in illustrations or story ideas. To this effect I have a suggestion to make, if you will permit me—especially with reference

to the illustrations. An illustration for a biological story, or for a story with a biological vein, could furnish us with great material of educational value, besides the fictional part. Such instance can be illustrated in a picture, where the brain or some other biological entity is playing a part in the story. The part of the picture in science-fiction, in its usual form, is to express a view of a certain episode, either fantastically, or not. Not discarding the fantastic idea, we can be able to discover, within its layout, at the same time, the actual anatomy of the brain, true to its proportion. In this way we can be given a thorough knowledge of this origin, which so very few have an idea about, and it is sure to produce a novel effect.

For instance, take a story with an idea of a mechanical brain! A normal brain, as we know, can't function the same as the behavior of the mechanical monster, which the brain controls, and which is to be described in the story. Naturally, we must discover this abnormality in the brain, but we do it *pictorially*! By using such expedient, we connect it with the actual ends of the story, showing the normal parts of the brain at the same time.

While I am writing this letter my idea of such picture is, that it may look like one of those old maps that show actual roads and houses in their detail—they specify them! Your artist staff, I am sure, could work this idea out and improve it greatly. Its outline, though, I believe, should be retained.

The fantastical expression of a picture in relation to this anatomical discourse, is a thing to be considered in itself. It can be incorporated as follows: first, with the explanations of its pictorial relations through directional factors. The same as in a private treasure map, when we look at it we see not only the treasure chest and the pirate, but there is a conspicuousness of the roads that interpret and lead. Now, the pirate and the treasure-chest in themselves can answer for the same purpose scenically, as that part of the episode, which the explanation through the roads on the map has just interpreted literally if it answers the purpose. The most important thing now, is the necessity for a relation between the distinct scene which in itself is only an entity, and the brain picture. To accomplish this we use *the brain to represent the map itself*! Also, at the same time that the long, white roads or the nerves lead with their explanations as a biological indicator, they can also be employed as an interpreter for fictional motives. For instance, the abnormal part, be it in the brain or some other biological entity, could be outlawed through fictional explanations, which would create interest for the normal anatomy of the human body.

The reader, in looking down at such picture,

will be affected by certain definite psychological impressions. In reading the story he can always trace, for explanations of certain of its phases, the "biological roads." Also, the final arrival at the motive of the story, where its connection with the bodily (brain) defect is brought out, will gain the reason of it being so, because a pictorial representation will afford it a justification for its existence and *vice-versa*. In technical viewpoint, the presence of that abnormal part will carry an attribution of a biological fault. With that viewpoint and the understanding that each part will act accordingly, the particular scene we have seen before can only be a representation of one episode of the individual's behavior as a whole.

I am not an artist; I never drew in my life, but I think that illustrations, alongside science-fiction has tremendous possibilities, and especially you, as an editor, ought to see it.

But I am through. Now, before ending this letter, I would be grateful if you would record me here, to your readers for a notice of scientific importance to which some, I hope, may respond—that I have AMAZING STORIES from its first issue—up to date, in monthlies, also all quarterlies. These I want to sell, singly or as a whole. Please remember, though I am selling all of my mags., I will still continue to read AMAZING STORIES.

H. Weissman,
161 W. 21st Street,
New York, N. Y.

(Your ideas are quite suggestive. We will refer them to our art staff for their consideration.—EDITOR.)

Criticism and Some Requests from a Reader Editor, AMAZING STORIES:

I am a steady reader of A. S., but I have never written in before. Ever since I started in 1929, it has been my favorite magazine up until you changed from the large to the small size. My brother was binding them and when you changed he had to quit. I think it would be a good idea to change back to the old size.

I also think it would be well to reprint a few of the old serials you had about 1930, such as, "The Drums of Tapajos," "The Swordsman of Sarvon," "The Stone from the Green Star," "The Spacehounds of IPC" and "Television Hill" and others. I want to especially ask you to reprint, "The Swordsman of Sarvon" and "Television Hill."

Thomas V. Bowmer,
2427 West 78th Street,
Inglewood, California.

(The smaller size or the format of the magazine has been approved of by a number of correspondents. We have a number of excellent stories awaiting publication; it would be a pity not to publish them.—EDITOR.)

Stories and Back Issues of AMAZING STORIES Wanted

EDITOR, AMAZING STORIES:

I heartily agree with the exponents of the larger size, and I will add that it lends the mag. that distinction which makes it the "aristocrat of science fiction," but the size is not as important as the material, of course. Speaking of material, couldn't you get J. W. Campbell, Jr., to write one of his stories about Fuller, Wade, Morey, etc., for you.

As for the stories in the May issue:

The White City—Interesting, but not much science.

Liners of Time—Excellent so far.

Older Than Methuselah—Well handled, but it has a hackneyed, stereotyped plot.

A Saga of Posa and Nega—Joseph Skidmore has a delightful style of writing, and he certainly has chosen an original theme for his series of stories.

The Gipsies of Thos—Very good.

I would like to obtain any stories by J. W. Campbell printed before October, 1932, and also the November and December, 1933, issues, and the July, August, September, October, November and December issues of 1934 of AMAZING STORIES. If any reader of A. S. has these issues for sale, I would appreciate it if he would communicate with me.

Frank Driggers,
Quarters 22,
Fort Douglas, Utah.

(We thank you for your appreciation. J. W. Campbell, Jr., is still on our roll of authors. You will probably hear from readers having the issues you ask for. We are sending a note of your requirements to our Circulation Department and you will hear from them in a few days. You must have noticed that many of our readers have copies of AMAZING STORIES to dispose of.—EDITOR.)

AMAZING STORIES in England—Mistakes in Stories

EDITOR, AMAZING STORIES:

I have been a reader of AMAZING STORIES for about three years and would like to throw a few suggestions at your feet.

There are plenty of stories with errors in them which it pays to ignore if one wishes to enjoy the story. I suggest that you offer a small prize every month for the best letter pointing out an error.

If this does nothing else, it will give the authors an excuse to fall back on.

Why not offer a standing prize say—\$20.00 for a good plot for your regular authors to work on. Some of the plots they use were old when the magazine started. Unfortunately we have no science-fiction magazines in England so I rely on my supply from the U. S. A. and often miss an edition which is rather annoying, especially when it is the end

of a serial. I never read the end of "Triplanetary," by Smith.

I would like letters from any part of the U. S. A. particularly from readers interested in radio, and wireless control.

C. A. Parker,
12 Howard Road,
E. 11, London,
England.

(We have an agent in London, to whom you might explain your difficulties in procuring AMAZING STORIES. The Hachette Co., 3, La Belle Sauvage, Ludgate Hill, London, E. C. 4, is agent for Continental Europe. The Woolworth shops sell the magazine, but not up to the most recent dates of issue. Our agent for Great Britain is Atlas Publishing and Distributing Company, 18, Drive Lane, Fleet Street, London, E. C. 4.

**A Communication to the Editor Not Less
Interesting for That—AMAZING
STORIES Is Not Slipping**

Editor, AMAZING STORIES:

I will endeavor to explain by means of word-pictures what was not clear in my letter of October 5th. I thought at the time of composition that my statements were quite clear, but as you seem to have misunderstood them I will explain.

When I said that my letter would not receive an answer I thought that you as a busy individual could hardly take time off to reply to a mere reader.

I hardly think that the small cross-section of the Science Fiction readers as represented by your Discussions is quite a fair example of the readers as a whole. It is inclined to be prejudiced and it is not a customary editorial policy to print letters which *really* express opinions. True, a number of readers consider that AMAZING STORIES still continues to hold up the standards of several years ago. Having read your publication since inception I believe that I am capable of stating that AMAZING STORIES is *slipping!* And has been doing so for the past two years.

When I referred to "coming events," I meant a little column which used to run on the contents page of each issue, forecasting the stories to appear in the next issue and giving a small synopsis of each.

I hope that any misunderstanding will be cleared up by this letter and I still want to remain a friend of AMAZING STORIES and its Editors.

Fred Anger,
2700 Webster Street,
Berkeley, California.

(This letter perhaps was not written for publication, but we take the liberty of putting it in Discussions. It will be appreciated for its candor as well as fine expression of friendliness.—EDITOR.)

**A "First Letter" to AMAZING STORIES—
Do Not Let It Be the Last**

Editor, AMAZING STORIES:

In writing my first letter to AMAZING STORIES, I would like to compliment you on your serials. I have only been reading your magazine since the November issue, but of the four serials it has contained since then, three have surpassed anything that has appeared within the pages of your rivals.

I refer to "Conquest of the Planets," by Campbell, "Earth Rehabilitators," by Kostkos and the great "Liners of Time," by Fearn. These three might be classified as good, better, best. I am basing my opinion on "Liners of Time" entirely on the first installment, but I am not greatly worried about the quality of the rest of the installments, as Fearn seems well able to take care of them.

I must throw a brickbat after all this praise. Your complete stories are not up to the standard of your serials. They seem to lack some vital spark, or something. However, the "Martian Mail" was very good, and "Relativity to the Rescue" and "The White City" were adequate. "The Moon Waits" was good if one overlooked the science.

Would like to see AMAZING back to the large size, as I read one or two issues in 1929 and liked it very much. I would like to see another Quarterly appear almost as much as I would like to see this in print. I cannot close without another brickbat: I don't like Stanton Coblentz. He seems to have a "sunken city" complex. I wish you could at least bring him up for air in two or three issues.

Well, it's hard to close with a brickbat. I like the way you battle the critics. You live up to your name. You are a true "Fighting Irishman."

James C. Tibbetts,
64 Brown St.,
Liberty, Mo.

(It is probably quite fair to say that a good serial is easier to produce than is a good short story. If a model is chosen, it might be O. Henry, the danger of imitation comes to the front. This might operate to destroy any good that was in the writer. The discernment or discovery of imitation ends the claim of a story to any real merit. You are wrong about Coblentz. His work in our columns has elicited much admiration. He has also done some good work in verse.—EDITOR.)

**Books to Exchange for AMAZING STORIES—
An Appreciation for Pennsylvania
EDITOR, AMAZING STORIES:**

I have several novels, history and science books, which I will trade in for AMAZING STORIES. These are all books and are mostly in excellent condition. Some of the history and science books are very interesting and educa-

tional. I will trade these books for issues of AMAZING STORIES of any date. If anyone is interested in trading with me, please write to me at once, and I will forward you my complete list of books.

Now for a little about AMAZING STORIES. The magazine kindles the spark of adventure that lies in all mankind. To some it is more than a joy—a relief from the worries and hardships of the day.

AMAZING STORIES prints those stories that hold the reader's interest, helping spare hours to fly and be enjoyed by all. "Our Mag." helps the thousands of readers to actually live the thrills and lives of each new character from the pens of your wonderful staff of writers.

I feel that it is just and right for the readers of a worthy magazine to show their appreciation of the editor's efforts to give them only the best. After all, we readers are your associate editors.

From a perusal of recent copies of AMAZING STORIES, I predict a rapidly increasing circulation of your worthy publication. Certainly this will occur unless you revise your present editorial policy and give your readers an inferior class of stories.

Your covers are fascinating and actually act as a salesman on the newsstands. This is accomplished and brought about by your superb artist, Morey. Morey does good work both on the covers and inside illustrations. You are very fortunate to have such a worthy artist.

The May issue of AMAZING STORIES was excellent. The cover painting, by Morey, is a fine piece of artistic work.

The editorial, "Gliding and Soaring," by T. O'Connor Sloane, Ph.D., was very interesting and educational. I always take great pleasure in reading Dr. Sloane's editorials.

This issue contained a few excellent stories, by a few of my favorite authors. "The White City," by my most favorite author—David H. Keller, M.D., was very interesting and well written. This was an unusual story and it contained a good plot. In my opinion, this is the best story in this issue and takes first place. "Liners of Time," by John Russell Fearn, was a splendid story. Keep up the good work, Mr. Fearn. This story takes second place. "A Saga of Posi and Nega," by Joseph William Skidmore, was a masterpiece. I enjoyed it immensely. This story takes third place. You're great, Mr. Skidmore. "Older Than Methuselah," by Stanton A. Coblenz, was a very fine story. It was interesting all the way through, and it kept you in suspense all through the story. Congratulations, Mr. Coblenz, this story takes fourth place.

AMAZING STORIES is sure making great progress, and soon it won't have any rivals. But keep running fast, don't look back and you will win the race. The race is now on, and may the best man win!

I guess I will now close this letter, or else I will get that disease, "science-fictionitis," which Mr. Clark spoke about under "Discussions." Thanks for the tip, Mr. Clark; you will save us many doctor bills. However, here is the cure, which I have been working on for years and which is now perfected—EAT MORE SCIENCE FICTION!

Au revoir, Mr. Editor, I'll be seeing you in next month's issue.

I am always glad to correspond with AMAZING STORIES readers.

Le Roy Christian Bashore,
310 North Seventh Street,
Lebanon, Pa.

(We can only express our thanks for your favorable expressions anent AMAZING STORIES. Especially we are glad to have the editorials enjoyed by our readers. You will probably hear from correspondents.—EDITOR.)

Some Rather Severe and Very Positive Criticism From a Positively Disposed Correspondent

EDITOR, AMAZING STORIES:

There is one fact that is important to remember above all in reading this letter. If I complain, it is because I wish to make a good magazine better. I am not pointing out the weak spots in a poor work but the improvable ones in a good work. This letter judges January to March inclusive.

1. Many letters complain of the rough edges. Many editorial comments ignore the complaints. If the cost is prohibitive, say so and end the argument. If not, please explain.

2. The size is convenient, but bad for this reason: There are many people who still have a poor opinion of this magazine because they have not read it. The small size puts it visually among the dime-novels and their opinion is confirmed.

3. The February cover was inaccurate. The men were supposed to be outside the creater looking in.

4. "Seven Perils to Quiches" was horrible. Every other story in the four issues was at the very least good enough. This story had no science, the story was told twice and the second telling lacked the virtue of brevity.

5. The plots sometimes repeat. But the average of this magazine is above that of others and more new angles are introduced than in others.

6. "Discussions" is invariably good, but Mr. Editor, don't let your pride in foreign readers crowd out the American. The letters should be judged by their contents, not by their geography. If you print all letters this does not apply.

7. The reprint question is the most important. Let me answer Arthur Jones, Jr. (a) His counter to the objection that Verne is in all libraries is that he makes a collection of science

fiction. But the object of this magazine is not to please a handful of collectors. Very few people have time to re-read old magazines. (b) Everyone has not read Verne, he says, because the census is at the figure of two billion. What of it? The circulation of the magazine is not two billion. And most of our readers have read Verne, or don't want to. (c) His reply to the antiquity of Verne is silly—"he is real literature." Granted that Mr. Jones knows what constitutes real literature and that Verne is real literature, the fact remains that other stories are real literature and they are often found in this magazine. Furthermore, as several other correspondents have proved, the science of Verne is childish now. He is at fault somewhere in eighty per cent of his stories. There is no excuse for printing in this magazine any story, however good, that contains faulty science. Verne's heroes, by the way, violate the law of averages more than most modern ones.

8. Serials: This same reader wants three serials in each issue because they are real book length novels. Admitted. The solution is to print an entire serial in one issue. It is annoying to have to save several copies from month to month. If I did not know that one serial per issue is needed to make people buy the next issue, I would advocate none at all. The serial is not literature, it is a very necessary trick of the magazine trade.

9. It might be advisable to put more machinery and fewer people upon the covers.

10. If I have to pay my quarter for Jules Verne, I shall change to another magazine.

11. By the way of parenthesis, I like this magazine.

Albert Field, Jr.
364 Beech Spring Road,
South Orange, N. J.

(We certainly appreciate your desire as expressed in the opening paragraph of your letter. Your dictatorial expression of views we consider rather amusing. What the "argument" is you do not make clear. You might compare our format (size) with that of the "ATLANTIC MONTHLY" and other magazines of that class. For the February cover we refer you to the paragraphs it illustrates, beginning at the foot of the second column of page 42. There is nothing said there about a crater and men looking into it. Nothing of Jules Verne's writing has been published for a number of months. The serial problem cannot be solved in a way to please all readers. You should always date your letters.—EDITOR.)

A Quantity of Favorable Comment for An Editor Who Thoroughly Appreciates It
Editor, AMAZING STORIES:

I have been a reader of your interesting magazine since 1928, and have found it to be

very educational despite its title of **AMAZING STORIES**. Theory has always been the forerunner of all the amazing facts. Naturally many of the stories sound "screwy," but nevertheless "amazingly" interesting. I have read the stories of Harl Vincent, Dr. Miles D. Breuer, Otis Adelbert Kline, H. G. Wells and Jules Verne. Amongst the outstanding is one, your author, explorer—A Hyatt Verrill. His stories remain in a class by themselves. They seem so realistic, it's uncanny. I wonder how many readers remember "The World of Giant Ants," "The Green Girl," "Into the Prism" and "Beyond the Prism." I've read the first two about half a dozen times. The other stories which remain indelible on my mind are the "Skylark" stories and the sequel. In fact I still have all these magazines.

I noticed in the last edition one of the readers expressed the desire of having the "Skylark Stories," reprinted. I happen to have some 1930 and later issues on hand I could dispose of. If any reader wishes to get the copies they could communicate with me. The 1930 issues were rather larger than the ones we get now and took up too much space.

I might have praised Verrill's work a little too highly, but he is worthy of it. This of course, does not lessen my respect for the other authors. Another whom I forgot to mention was Nathanson, the author of "The Conquest of the Earth."

Taken altogether, I throw nothing else but roses to **AMAZING STORIES**. More luck to you and more success.

Edward Ghiz,
7429 Berri Street,
Montreal, Canada

(The caption at the head of this letter tells the story and expresses our feelings so well that there is nothing to be said here except that we warmly appreciate such favorable comments and good wishes.—EDITOR.)

Hitting the Bullseye of Modern Fiction
Editor, AMAZING STORIES:

As a journalist I should like to make a few remarks regarding **AMAZING STORIES**. I often open the pages of your interesting and unusual publication in an effort to find some fiction intellectually palatable and emotionally stimulating. While I cannot say that I am always satisfied to the full, I must admit that you have one of the very best magazines in the country.

However, like all monthly publications, you face the danger of having the type story you feature, fall into a definite and mechanized form. And, that is a state of affairs that I should not want to see, so far as **AMAZING STORIES** is concerned.

It was with extreme pleasure, therefore, that I read "The Gipsies of Thos," by R.

Frederick Hester, in the current number. Here is a story which treats of inter-planetary travel, but, the author evinces talent and craftsmanship of an unusual order. His description of a storm, Chapter 6, is a piece of literary work not often found in modern publications. Your introductory comments about the story are quite to the point when they stress that it is "à la Dean Swift" in style.

Having read Mr. Hester's work in many publications but finding him in *AMAZING STORIES* for the first time, may I therefore, be permitted to suggest that you get him to write a story in which the characters think in, say, four dimensional modes, instead of our known categories of thought? I am sure it would be intensely interesting, and "The Gipsies of Thos" really calls for a sequel. . . .

With best wishes for the success of *AMAZING STORIES Magazine*—which has scored a *oeil de boeuf* in modern fiction, I remain,
Jack Benjamin,
Bronx, N. Y.

(We thank you for your appreciative words; as you know we editors need encouragement.—EDITOR.)

Wild Bill as a Critic

Editor, *AMAZING STORIES*:

I have no quarrel with W. B. (Wild Bill) Hoskins, who attacked my story, "Relativity To The Rescue," *via* your Discussions Columns. He has a right to his own opinion. Perhaps his observations were based wholly on prejudice against the story. That, also, is his privilege. Perhaps, on the other hand, the editor made a slip-up in accepting the story for publication. One cannot expect him to be infallible, even though he edits such a reputable, scientific-fiction magazine as the *AMAZING STORIES*.

Perhaps a partial explanation would not be out of order. My reference to "windows, *aberrated* with moisture" was to the effect that any object, as viewed through the irregularly surfaced coating formed by beads of moisture, would be to some extent shifted aside, due to the refraction or bending of light rays at an angle through liquids denser than the medium through which the light rays are passing. If one thrusts a stick into a glass of water, it appears bent, or thrust aside from its natural path, due to refraction of light waves. I do not think that the term "aberrated" was a misapplication. His criticism of "languoring" seems to have been a mental "aberration" upon his part, inasmuch as he declaims that "languor" is no verb—failing to mention the metamorphosis naturally enhanced by the addition of the suffix "ing."

My personal preference as yet leans toward "vacuumized." Perhaps, through deference in the future to Mr. Hoskins, I may use "vacuumated." "Awkward," "bestial," and "resplen-

dent," were used as adjectives rather than adverbs. For instance, I presume that my misapplication of "bestial" was extracted from the sentence, "His mouth drooped bestial and full-lipped. . . ." The allusion to the word as an adjective describing "mouth" should have been clearly deduced by its association with "full-lipped." Under the circumstances the rest of the sentence would have been mangled by applying the adverb "bestially" in its stead. A comma, following the word "drooped," would doubtless have been a better form, although it is not entirely necessary. I have, indeed, a habit of using adjectives in such a manner. Every writer falls into more or less distinctive "styles." Incomplete sentences are often rampant, in some of the best descriptive fiction. I'm certainly not alone in using them as exclamatory description. Words in quotations are not necessarily composed of unadulterated grammar. If they were, it would rob "realism" from speech of characters who are presumed to be "actual, living," people rather than walking dictionaries and "good English cranks."

If I were to assure my critic that his assertion, that "glaring eyebrows" is a misuse of English language, is in reality a "glaring error" on his part, he might understand how eyebrows might glare in much the same manner that errors glare.

Grammatical discrepancies and typographical errors are bound to creep into any story. I've observed them in the best of narrations. Personally, I doubt if there is a single story in your magazine, or any other of its contemporaries, which would be entirely perfect in English composition upon painstaking analysis.

Personally I have no ill-will toward Mr. W. B. (Wild Bill) Hoskins because of his dislike for my stories, which I feel has influenced him greatly in his criticism. I have just as great a dislike for personal squabbles within the readers' Discussions departments of science-fiction magazines, and I do not intend to discuss the matter at length, regardless of any deleterious rebuttal he may contemplate. I will not even assert that my story was entirely free of typographical or grammatical mistakes.

It is up to the readers to offer constructive criticism to the editors, as they see it, for the future guidance of your editorial board in selecting stories of a popular vein. I compliment Mr. W. B. (Wild Bill) Hoskins upon the accomplishment of the aforesaid duty.

J. Harvey Haggard,
932 5th Street,
San Bernardino, Calif.

(The word "aberrated" applied to refraction of light is expressive; it is to be remembered that aberrate is an intransitive verb. "Languor" meaning 'languish' is an old timer. As "vacuumize" is given in Webster's Dictionary as a

verb, you should stick to it, even if Wild Bill prefers a word not given in the 1928 edition of Webster's. Then "awkward," "bestial" and "resplendent" were used as adjectives. The use of adverbs where adjectives belong is a weakening error. Your use of adjectives is correct.—EDITOR.)

AMAZING STORIES Is "Improving"—We Wish It Was So Good It Did Not Need To—

Perhaps It Is

Editor, AMAZING STORIES:

I have just finished reading the February, 1935 issue and I can honestly say that the old Mag. seems to be improving of late. This is how I place your stories in that issue: 1. "Conquest of the Planets." 2. "Discussions." 3. "Valley of the Rukh." 4. "Seven Perils to Quiches." 5. "When Time Stood Still." 6. "Editorial." 7. "The Thing In The Woods." 8. "Poem," and 9. "The Island of White Mice." David Keller ought to be jumped on for writing a sling of a story like that; why I could do better myself. Say, what are you going to do about all them there fellers who keep on hissing and shouting about the size of the Mag.? and smooth edges and so-and-so's cover? Why they just about make me sick. Every time I read the Editorial I see some argumentive boobs in long clothes moaning about edges and size.

Why not get Paul Ernst and Ray Cummings and A. T. Burks to write a few stories. I have read their stories in other science-fiction books and they always seemed good. (We had one book on science-fiction published weekly in England and it ran under the glorious title of "Scoops" and publication stopped after six unsuccessful months; they didn't publish enough scoops.) In your last September issue you printed, "Noekken of Norway." Let's have some more like that. The finest stories I have ever read are by Edgar Rice Burroughs—his Mars and Venus series; anyone else agree with me? I don't expect anyone to, not Americans anyway. Now, if anyone has any weird fiction and strange tales to sell or exchange will they please communicate with me as I have about one hundred science fiction and terror mags. I am willing to exchange, and now I must close after congratulating you on your fine magazine and your high standard stories. When an author writes a story has he to have it copyrighted before it will be accepted for publication?

Ivor M. Dickens,
Park Road, Stapleton,
Bristol, England.

(Your letter is very encouraging and we all need a little of that medicine. No copyright is required on a story submitted to a publisher. It is perhaps a good plan to do it as it costs very little.—EDITOR.)

An Advocate of Wesso's Work—We Are Strong Advocates of Morey's Illustrations

Editor, AMAZING STORIES:

The May issue wasn't much to write in about. My only hope is pinned on the year and a half late "Liners of Time," having just pulled into A. S. Dock after being lost in the fourth dimension (?) However, I'll have to wait until it is complete as I always like to read serials all at once, and not have to leave off in the most interesting part.

The complete stories were all very mediocre, even Dr. Keller's, which is unusual. I guess it is because I've been reading quite a few old AMAZING Monthlies and Quarterlies lately. Just finished "Birth of a New Republic" by Breuer and Williamson. Whatta combination! Whatta story! It certainly was a masterpiece. It ranks in with the Skylark stories and other classics of stf.

Say! why have you stopped telling us how many parts a serial is going to be? Also where are the little fillers that tell us what is coming next month? We want 'em back!

The editorial was as good as ever, and so was Discussions.

And now I want a DEFINITE answer to this question. Where is Wesso? In the past you have always ignored this question or have evaded by some such answer as "Wesso is no longer with us." I know he is no longer with you. I want to know why??? Is he dead? Did he abscond with the funds or something? The more I see of his works, the more I am convinced that Wesso was and is superior to any artist drawing for stf. magazines to-day. You give space to that crazy SPWSSTFM so you ought to give some space to a society that is just as worthy. The Society for the Purpose of Bringing Wesso Back to STFB. All fans interested in joining the SFPBWBTSTF write to me. I am glad to see a couple of people agree with me about Morey. I think he has taken the advice about skinny underpinnings on people to heart, as the May cover is O. K. except for its costumery sombreness, but as Corwin Stickney? jr. says, he needs some competition. With Wesso and Morey illustrating together as of old. I'm sure the art situation would be cleared up.

There would always be kickers no matter what you did with the magazine and I doubt if the average story in the "Good Old Days" was a whole lot better than any you are publishing now. Very likely if some of the stories that are criticized so vehemently now were published then they would have been hailed as classics and *vice versa*. It is growing increasingly hard for authors to think up new ideas, which is what most people want. If a story of the "Good Old Days" could be reprinted without anybody knowing it was a reprint, it would undoubtedly be called a "bore some rehash" while if it was an acknowledged reprint,

it would be acclaimed far and near. *Nicht wahr?*

Well, best wishes and hopes for an improvement in the June issue.

Arthur L. Widner, Jr.,
79 Germain Avenue,
Quincy, Mass.

(The powers that be maintain in this office a group of artists to work on magazines, and we are getting such good work from them that we feel there is no need of going outside for talent. Some readers enjoy the serial—the period of waiting seems to give them pleasing suspense. We are using “little fillers” as you call them. Two stories in this issue were announced in a preceding number. We do not know what your alphabetical allusion to us means.—EDITOR.)

A Tribute to A. Hyatt Verrill

Editor, AMAZING STORIES:

Seldom do I write a “Letter to the Editor” and then only when motivated by a deep desire to accomplish something. This is written, therefore, with the hope that you will continue to give us more stories by A. Hyatt Verrill.

His stories are not only the best in imaginative scientific fiction, but his lucid style and logical presentation give them real literary value.

Critics as a rule are sterile egotists, but even at the risk of being placed in that category, I make some claim to able criticism. Back in 1927, I picked out “The Island of Dr. Moreau” from AMAZING STORIES and wrote to Carl Laemmle, suggesting it would make good film material with Lon Chaney in the rôle of the Doctor. Mr. Laemmle very courteously wrote me that it was too fantastic and unsuitable, but some years later, after the death of Lon Chaney, it was filmed quite successfully as “The Tiger Woman.”

Another story which I chose at that time as being out-standing, “The Second Deluge,” was also used for film material.

Of course, I realize that writers of ability cannot be prolific enough to produce a story monthly, but you raise the standard of your magazine far above all imitators when you print material from the pen of such a genius as A. Hyatt Verrill.

Please let me add that this letter is meant to be one of sincere praise—a natural one.

Corrinne M. Grayson,
4600 Diversey Avenue,
Chicago, Ill.

(If you will look into “Who’s Who in America,” you will find that Mr. Verrill is an extremely prolific writer. He is a distinguished archaeologist but has touched on many subjects. He will appreciate your tribute.—EDITOR.)

Criticisms, Appreciations and Desires

Editor, AMAZING STORIES:

I bought the May issue of AMAZING STORIES to-day. The best story was “The White City” by Keller. David H. Keller is “the” science-fiction author. I will now make a list of my bests.

1. Best magazine—AMAZING STORIES. 2. Best artist—Frank Paul. 3. Best authors—Keller and Williamson. 4. Best stories “Life Everlasting” and “Legion of Space.” 5. Best character—Tain of San Francisco. 6. Best issue of AMAZING STORIES since I have been reading science-fiction was December, 1934, issue. (I started reading science-fiction January, 1934.)

Here is my list of wants. 1. Smooth edges. 2. Illustrations by Paul, Wesso and Clay Ferguson. 3. Stories by Williamson, Kline, Weinbaum, Wandrei and Burroughs. 4. Regular issues of the Quarterly.

I have copies of “Amazing” for sale. Readers interested please write to me for list. Stamp appreciated.

Robert A. Madle,
333 E. Belgrade Street,
Philadelphia, Pa.

(We have had great satisfaction in the work of the artist, Leo Morey. A letter of such definite criticism is very highly appreciated by an Editor, who has the futile desire of pleasing everyone.—EDITOR.)

A Short Appreciation But No Address Is Given

Editor, AMAZING STORIES:

I have been reading the AMAZING STORIES for the last six months and I think that it is the best magazine, bar none. Also, I think that the stories in February range as follows: “The World Aflame,” excellent; “The Contest of the Planets,” “An Epos of Posi and Nega,” good; “The Tale of the Atom,” good; “Land of Twilight,” too much love. On the whole I think February’s issue was quite good, but it was spoiled by “The Land of Twilight,” which was more or less a love story. I would like to hear from any reader in the world.

Bernard E. Taylor,
England.

(There is very little “love motif” in AMAZING STORIES, so you must stand the little we give you. You speak of hearing from any reader but do not give your address.—EDITOR.)

A Twelve-Year-Old Gives His Views on

AMAZING STORIES

Editor, AMAZING STORIES:

I’m twelve years old and have been an ardent reader of A. S. for about four years. One of the first I read was the “Swordsmen of Sarvan” which was “the nuts,” personally I think you should reprint it. I’ve also heard a lot about the “Skylark Series” which you might reprint also, outside of that I can think of no others, unless it was “Omega the Man.”

Vincent, Williamson, Campbell and Miller are swell but I heartily object to Coblenz. Oh, and by the way how about that "Tumithak" story you promised us so long ago. The "Sunlight Master." How about more stories?

Aside from all this your pardon that, our Mag. is perfect.

Lots, lots and lots of luck,

I forgot to say that "Room for the Super Race" and "The Last Earl" were swell.

Thos. McDonald, Jr.,

4118 Carpenter Ave.,

New York, N. Y.

(We have taken the liberty of omitting a few words of this letter. The expression "the nuts," we let stand; it is intended as a compliment we presume. Coblenz is distinctively an author for "grown ups." Wait nine or ten years and you will like him. The discussions take up a god deal of room as does the Editorial. We wish we had more room for stories.—EDITOR.)

An Approving Reader Writes an Encouraging Letter

Editor, AMAZING STORIES:

Having a lot of time to kill, I decided to hurl another page of tripe over the Editorial desk. It's not that I have anything especial to say; I haven't. I just want to let off a bit of excess steam.

Maybe it's just a change taking place in my own mind (and I assure you I have at least a faint trace of such an accessory, despite many probable contrary opinions), but I've noticed a definite upward trend in the quality of AMAZING STORIES of late.

Take the March cover, take April or May, and compare them with the October or November cover of last year. The later ones are much more finely done—much more pleasing to the eye—than any of '34, excepting perhaps the May and September issues.

Corresponding with the covers, the story illustrations also seem improving. The figure of the man in Morey's drawing for the first part of "Liners of Time" is the best human figure I've seen by him (and I've followed his drawings since those for "Microscopic Buccaneers," his first for A. S.). All his drawings for "Earth Rehabilitators, Consolidated" are excellent. And illustrations are one of the main factors in a real Science Fiction magazine.

At least we no longer see stories entirely ruined for the first reading by the illustrations. This happened quite often in '29 and '30. Witness: "The Metal Horde," "The Secret Kingdom," "A Visit to Suari," "Death from

the Skies," and many, many others. When I got used to the horrible smears of ink that stood for the drawings of these stories, I read them over again, and was surprised. They really were very good.

A few words on the stories. In April, I believe it was, you published a story by J. Harvey Haggard, entitled "Relativity to the Rescue." That's just the type we want more of; real action. Ever since the old *Astounding Stories* died out, there has been a woeful lack of action-science stories. Too many New! Inconceivable New Theory Expounded! Aeons! Nebula! The Fate of the Universe! etc., etc., etc. It gets tiresome. Try to strike a happy balance. Harvey Haggard's story was a masterpiece.

"The Mosquito Army" was well written, but made the usual mistake of placing the blame of a future war upon a certain existing country. If you authors write about future wars, please see that the wars are started in some fictitious country, like "Moronia," in Keller's "Yeast Men." Just to avoid hard feelings, y'know. (By the way, I'm *not* Russian, even in ancestry.)

"Liners of Time" starts out well.

Oliver Saari,

1342 First Street, S. E.,

Rochester, Minnesota.

(We agree with you about the use of an "existing country" as the enemy in fiction. We shall hope that your idea may be carried out in future. We are trying out the effect of the former "Comet Tail" title on the covers. We have a number of good stories awaiting publication, but we are greatly interested in our authors. It is most gratifying to find the old names appearing on our pages.—EDITOR.)

A Set of AMAZING STORIES for Sale

Editor, AMAZING STORIES:

In the interests of some of your readers desirous of obtaining back numbers of AMAZING STORIES, will you please publish this letter?

I have a set containing all copies of the monthly from June, 1926 to October, 1934 inclusive, all copies of the quarterly from Winter, 1928 (the first) to Spring-Summer, 1933, and also the one lone A. S. Annual.

Economic necessity forces me to dispose of my collection. Every copy is intact, including cover, no pages are missing, etc.

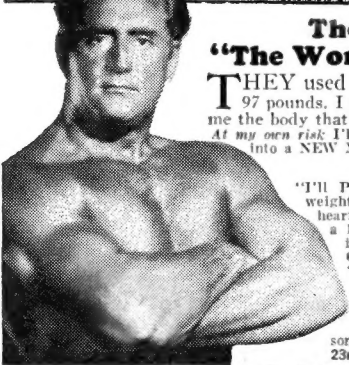
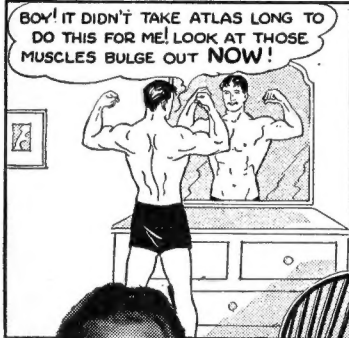
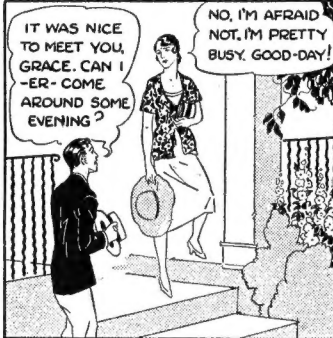
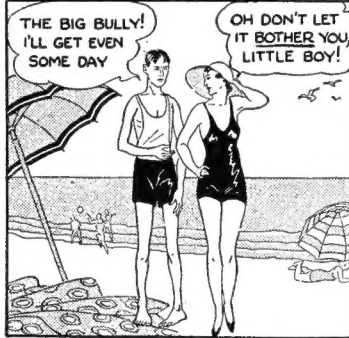
I prefer to dispose of the collection in a lump.

Charles M. Seraphine,

R. F. D. No. 2,

Vero Beach, Fla.

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115 East 23rd Street, New York, N. Y.

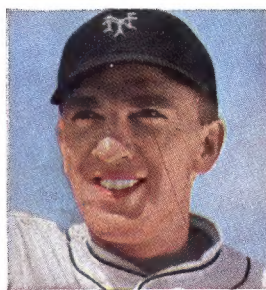
I want the proof that your system of *Dynamic-Tension* will make a New Man of me—give me a healthy, husky body and big muscle development. Send me your free book, "Everlasting Health and Strength."

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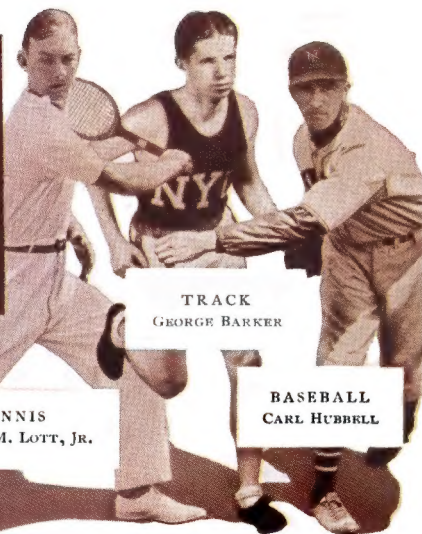
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CARL HUBBELL, of the N. Y. Giants,
likes Camel's mildness

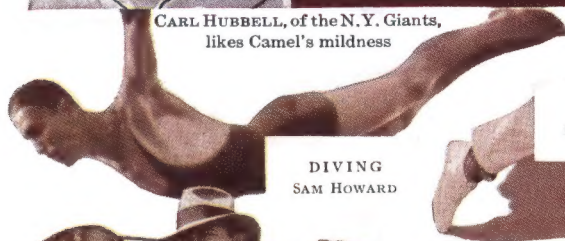
ATHLETES SAY:
"THEY DON'T
GET
YOUR WIND!"



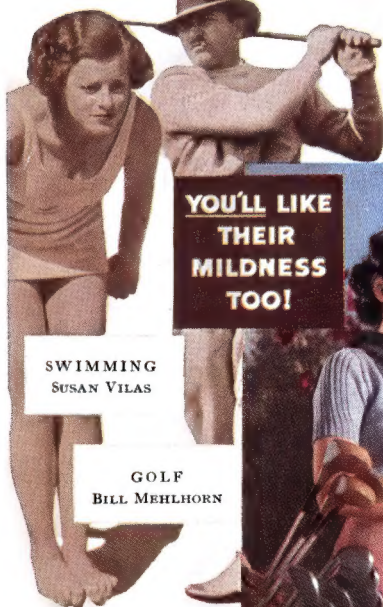
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GEORGE BARKER

BASEBALL
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